Superfield Records Center
SITE: Oak Street
BREAM: 2:2
OTHER: 596691

PHASE I SITE ASSESSMENT REPORT

FOR

2 WOODBINE STREET PROPERTY TAUNTON, MASSACHUSETTS RTN 4-13850

PREPARED BY:

RESOURCE CONTROL ASSOCIATES, INC. 474 BROADWAY PAWTUCKET, RI 02860-1377 401 728-6860

OCTOBER 16, 1998

PREPARED FOR:

MR. PAUL DONNELLY
CITY OF TAUNTON BUILDING DEPARTMENT
CITY HALL
15 SUMMER STREET
TAUNTON, MA 02780-3430



Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC-108

Release	Tracking
Number	

D E P FORM & PHASE I COMPLETION	STATEMENT	Number 13850
Pursuant to 310 CMR 40.0484 (Subpart D) a A. SITE LOCATION:	ind 40.0800 (Subpart H)	
Site Name: (optional)		
Street: 2 Woodbine Street	Location Aid: Oak Street and	Oak Avenue
City/Town: Taunton	ZIP 02780-4027	
Related Release Tracking Numbers that this Form Addresses: N/A	Code:	
Tier Classification: (check one of the following)	Tier IB Tier IC Tier II	Not Tier Classified
If a Tier I Permit has been issued, state the Permit		
B. THIS FORM IS BEING USED TO: (check all that apply)		
Submit a Phase I Completion Statement pursuant to 310 CMR 40.048	34 (complete Sections A, B, C, G, H, I and J).	•
Submit a Phase II Scope of Work pursuant to 310 CMR 40.0834 (com	plete Sections A, B, C, G, H, I and J).	
Submit a final Phase II Comprehensive Site Report and Completion (complete Sections A, B, C, D, G, H, I and J).	Statementpursuant to 310 CMR 40.0836	
Submit a Phase III Remedial Action Plan and Completion Statement, p	oursuant to 310 CMR 40.0862 (complete Sec	tions A, B, C, G, H, I and J).
Submit a Phase IV Remedy Implementation Plan pursuant to 310 CM	IR 40.0874 (complete Sections A, B, C, G, H,	, I and J).
Submit an As-Built Construction Report pursuant to 310 CMR 40.087	75 (complete Sections A, B, C, G, H, I and J).	
Submit a Phase IV Final Inspection Report and Completion Stateme (complete Sections A, B, C, E, G, H, I and J).	entpursuant to 310 CMR 40.0878 and 40.087	79
Submit a periodic Phase V Inspection & Monitoring Report pursuant	to 310 CMR 40.0892 (complete Sections A, I	B, C, G, H, I and J).
Submit a final Phase V Inspection & Monitoring Report and Comple (complete Sections A, B, C, F, G, H, I and J).	tion Statementpursuant to 310 CMR 40.089	3
You must attach all supporting documentation require any Legal Notices and Notices to Public 0		copies of
C. RESPONSE ACTIONS:		
Check here if any response action(s) that serves as the basis for the Ph is interested in using this information to create an Innovative Technolog		e Technologies. (DEP
Describe Technologies:		
D. PHASE II COMPLETION STATEMENT:		
Specify the outcome of the Phase II Comprehensive Site Assessment:		
Additional Comprehensive Response Actions are necessary at this Site Assessment.	, based on the results of the Phase II Compre	ehensive Site
The requirements of a Class A Response Action Outcome have been m (BWSC-104) will be submitted to DEP.	net and a completed Response Action Outco	me Statement
The requirements of a Class B Response Action Outcome have been in (BWSC-104) will be submitted to DEP.	net and a completed Response Action Outcor	me Statement
Rescoring of this Site using the Numerical Ranking System is necessar	y, based on the results of the final Phase II R	Report.
E. PHASE IV COMPLETION STATEMENT:	The second secon	
Specify the outcome of Phase IV activities: Phase V operation, maintenance or monitoring of the Comprehensive R Outcome.	Response Action is necessary to achieve a Re	esponse Action
(This site will be subject to a Phase V Operation, Maintenance and Mor	nitoring Annual Compliance Fee.)	
The requirements of a Class A Response Action Outcome have been me to ensure the integrity of the Response Action Outcome. A completed F to DEP.		
The requirements of a Class C Response Action Outcome have been me	et. No additional operation, maintenance or n	nonitoring is necessary

to DEP.



Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC-108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

Release Tracking Number 4 13850

. PHASE IV COMPLE	TION STATEMENT: (continued)					
action is necessary t Response Action Ou	o ensure that conditions are tcome Statement (BWSC-10	maintained and that furt 04) will be submitted to D	ther progress is made to DEP.	toward a Permanent Solution. A completed	.		
Indicate whether the 40.0006.):	operation and maintenance	will be Active or Passive					
Active Operation		(•				
(Active Operation ar	d Maintenance makes the S	ite subject to a Post-RA	O Class C Active Oper	ation and Maintenance Annual Compliance	e Fee.)		
	·						
• •				• • • • • • • • • • • • • • • • • • •			
/PIMEC 104) will be	submitted to DEP						
The requirements of to ensure the integrit DEP.	a Class C Response Action Out of the Response Action Out	tcome. A completed Res	sponse Action Outcome	e Statement (BWSC-104) will be submitted	το		
action is necessary Response Action Or	to ensure that conditions are statement (BWSC-1	e maintained and that fun 04) will be submitted to [ther progress is made to DEP.	toward a Permanent Solution. A complete	d		
Indicate whether the 40.0006.):	operation and maintenance	will be Active or Passiv	_				
Active Operation		(· ·				
	nd Maintenance makes the S	Site subject to a Post-RA	O Class C Active Oper	ration and Maintenance Annual Complianc	е		
3. LSPOPINION:							
form, including any and a standard of care in 309 Cl best of my knowledge, in if Section B indicates action(s) that is (are) the M.G.L. c. 21E and 310 Cl the applicable provisions	Il documents accompanying MR 4.02(1), (ii) the applicable formation and belief, that aPhase I, Phase II, Phasubject of this submittal (i) MR 40.0000, (ii) is (are) approof M.G.L. c. 21E and 310 C	of this submittal. In my pro- e provisions of 309 CMR ase III, Phase IV or Phase has (have) been developed poriate and reasonable to	ofessional opinion and 4.02(2) and (3), and (ii se V Completion State ed and implemented in accomplish the purpo	i judgment based upon application of (i) the ii) the provisions of 309 CMR 4.03(5), to the important is being submitted, the response accordance with the applicable provisions uses of such response action(s) as set forth	e e of		
> if Section B indicates that is (are) the subject of 40.0000, (ii) is (are) approm.G.L. c. 21E and 310 C	the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) compiles(y) with the identified in this submittal; if Section B indicates that aPhase II Scope of Work or a Phase IV Remedy Implementation Plan is being submitted, the response action(s) that is (are) the subject of this submittal (i) has (have) been developed in accordance with the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, (ii) is (are) appropriate and reasonable to accomplish the purposes of such response action(s) as set forth in the applicable provisions of M.G.L. c. 21E and 310 CMR 40.0000, and (iii) complies(y) with the identified provisions of all orders, permits, and approvals identified in this						
> if Section B indicates response action(s) that is 21E and 310 CMR 40.00 applicable provisions of	(are) the subject of this subr 00, (ii) is (are) appropriate a M.G.L. c. 21E and 310 CMR	mittal (i) is (are) being im and reasonable to accom	plemented in accordang	nce with the applicable provisions of M.G.L. such response action(s) as set forth in the	. c .		
		ing, but not limited to, po	ossible fines and impris	sonment, if I submit information which I kno	Ŵ		
Check here if the R issued by DEP or E	esponse Action(s) on which PA. If the box is checked, y	this opinion is based, if a rou MUST attach a state	any, are (were) subject ment identifying the ap	to any order(s), permit(s) and/or approval(s)		
LSP Name: Robert	C. Atwood	LSP#: 1481	Stamp:	A CHATH OF MASS			
Telephone: 401-728	-6860	Ext.:	2	ROBERT			
FAX: (optional) 401-7	Active Operation and Maintenance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance Fee.) PHASE V COMPLETION STATEMENT: city the outcome of Phase V activities: The requirements of a Class A Response Action Outcome have been met and a completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP. The requirements of a Class C Response Action Outcome have been met. No additional operation, maintenance or monitoring is necessary to ensure the integrity of the Response Action Outcome. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP. The requirements of a Class C Response Action Outcome have been met. Further operation, maintenance or monitoring of the remedial action is necessary to ensure that conditions are maintained and that further progress is made toward a Permanent Solution. A completed Response Action Outcome Statement (BWSC-104) will be submitted to DEP. Indicate whether the operation and maintenance will be Active or Passive. (Active Operation and Maintenance is defined at 310 CMR 40.0006): Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject to a Post-RAO Class C Active Operation and Maintenance Annual Compliance (Active Operation and Maintenance makes the Site subject of Post-RAO Class C Active Operation and Maintenance						
Signature:	with Coll	thurs	4	CHICASTER STATE			
Date: 1/2 /2	619X			PROTE PROTE			

D E P

Massachusetts Department of Environmental Protection Bureau of Waste Site Cleanup

BWSC-108

COMPREHENSIVE RESPONSE ACTION TRANSMITTAL FORM & PHASE I COMPLETION STATEMENT

Release Tracking
Number
4 - 13850

Pursuant to 310 CMR 40.0484 (Subpart D) and 40.0800 (Subpart H)

H. PERSON U		AKING RESPONSI				
Name of	C:	ity of Taunto	n Building Depart	ment	·	Agreement of the second of the
Organization: Name of	Paul	Donnelly		Title:	Environ	mental Coordinator
Contact: Street: City	Hall,	15 Summer St	reet			
City/Town: Ta	unton			State:	MA	ZIP Code: 02780-3430
Telephone: 50	8-821-	-1015	Ext.:	FAX:	nal)	
Check here Action.	e if there h	nas been a change in	the person undertaking the	Response	iai)	
I. RELATIONS	SHIP TO	SITE OF PERSON	UNDERTAKING RESP	ONSE ACT	ION(S):	(check one)
RP or PRF	Specify	y: Owner ①	Operator	Transpo	rter Other R	P or PRP:
Fiduciary,	Secured L	ender or Municipality	with Exempt Status (as def	ined by M.G.	L, c. 21E, s.	2)
Agency or	Public Uti	ility on a Right of Way	(as defined by M.G.L. c. 21	IE, s. 5(j))		
Any Other		ndertaking Response	Action Specify			
		F PERSON UNDER	RTAKING RESPONSE A	CTION(S):		
inquiry of those in my knowledge a responsible for including, but no	information individuals and belief this submot limited	on contained in this sistemediately responsible, true, accurate and contitual. If the person or each, possible fines and	ubmittal, including any and a ible for obtaining the informa omplete, and (iii) that I am fo entity on whose behalf this s imprisonment, for willfully s	all document ition, the mat ully authorize submittal is m ubmitting fals	s accompany erial informa d to make thi ade am/is av se, inaccurate	jury (i) that I have personally examined and ar ving this transmittal form, (ii) that, based on my tion contained in this submittal is, to the best of is attestation on behalf of the entity legally vare that there are significant penalties, e, or incomplete information.
By: Jan / (signature)		melly		Title:	Environ	mental Coordinator
For City of	Taun	ton Building	Department	Date:	<u>October</u>	26, 1998
(print name	of person	n or entity recorded in	Section H)			
Enter address o	f the perso	on providing certification	on, if different from address	recorded in	Section H:	
Street:	*					
City/Town:				State:		ZIP Code:
Telephone:			Ext.:	FAX:	(optional)	
				FORM, YO	U MAY BE	MAY RETURN THE DOCUMENT AS PENALIZED FOR MISSING

PHASE I – INITIAL SITE INVESTIGATION REPORT 2 WOODBINE STREET PROPERTY TAUNTON, MASSACHUSETTS RTN 4-13850

TABLE OF CONTENTS

Phase I Completion Statement (I	BWSC-108)
---------------------------------	-----------

EXEC	UTIVE	SUMMARY 1
1.0	INTR	ODUCTION 2
	1.1	Purpose 2
	1.2	Scope of Work
	1.3	Previous Site Investigations
2.0	GENI	ERAL DISPOSAL SITE INFORMATION
	2.1	Release Tracking Number
1	2.2	Location of the Disposal Site
	2.3	Site Description
•	2.4	On-Site Workers 5
1	2.5	Residential Population within One-Half Mile of the Disposal Site
	2.6	Land Uses Surrounding the Disposal Site
•	2.7	Natural Resources 6
3.0	DISP	OSAL SITE HISTORY
	3.1	Owner/Operator and Operations History
	3.2	Release History
	3.3	Oil and/or Hazardous Materials Use and Storage9
	3.4	Waste Management History
l	3.5	Environmental Permits and Compliance History
!	3.6	Potentially Responsible Parties
4.0	SITE	HYDROGEOLOGICAL CONDITIONS
	4.1	Subsurface Investigations
)	4.2	Site Topography
1	4.3	Site Geologic and Stratigraphic Conditions
	4.4	Groundwater Flow Direction

5.0	NATU	RE AND EXTENT OF CONTAMINATION	17
	5.1 5.2 5.3 5.4	Field Screening Laboratory Analysis Conducted Results of Laboratory Analysis Estimate of Horizontal and Vertical Extent of Contamination	17 17
6.0		ATION PATHWAYS AND EXPOSURE POTENTIAL	
	6.1 6.2 6.3	Migration Pathways Human Exposure Environmental Receptors	20
7.0	EVAL	UATION FOR IMMEDIATE RESPONSE ACTIONS	21
8.0	CONC	LUSIONS	22
9.0	LIMIT	ATIONS AND REPORT AUTHORIZATION	23
FIGU	RES		
Figure Figure Figure Figure TABL	2 2 3 4 2 5	Site Locus MassGIS ("Site Scoring") Map Plat Map Site Plan Groundwater Elevation Contours	
Table Table Table Table Table	2 3 4	Survey Data Groundwater Elevation Summary Soil Analytical Summary Groundwater Analytical Summary Summary of Potential Exposure Pathways and Evaluation of Health and Environmental Risk	
APPE	NDICE	S	
Apper Apper Apper	ndix A ndix B ndix C ndix D ndix E ndix F	Test Pit Logs Drilling Logs Laboratory Certificates of Soil Analysis Laboratory Certificates of Groundwater Analysis Water Well Survey Additional Limitations	

"F:\DOC\4640\T\TAUNTONW.WPD"

PHASE I – INITIAL SITE INVESTIGATION REPORT 2 WOODBINE STREET PROPERTY TAUNTON, MASSACHUSETTS RTN 4-13850

EXECUTIVE SUMMARY

This Phase I – Initial Site Investigation report concerns the disposal site located at 2 Woodbine Street, Taunton, Massachusetts, identified by the Massachusetts Department of Environmental Protection (MADEP) as Release Tracking No. 4-13850

The MADEP inspected the disposal site in October 1996, and identified violations of the wetlands protection and solid waste regulations. The MADEP entered into an Administrative Consent Order (ACO-SE-97-R001-46) with the owners of the disposal site, and the City of Taunton in September 1997. The ACO stipulated that assessment activities be conducted in accordance with the landfill regulations. Initial subsurface investigations, which were completed in December 1997, identified contaminants dissolved in groundwater at concentrations exceeding reportable concentrations. The parties of the ACO met in January 1998 and agreed to proceed under provisions of Massachusetts General Laws (MGL) c. 21e and the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000), with the understanding that the ACO would be revised to reflect the agreement.

Based on the decision to manage the disposal site under the MCP, a Release Notification Form was submitted to the MADEP Bureau of Waste Site Cleanup on May 1, 1998 to meet the requirements for "120-day notifications."

The groundwater categories applicable to the disposal site are "GW-2" and "GW-3." Based on disposal site activities and use, the applicable soil categories are "S-1," "S-2," and "S-3."

In addition to research of the disposal site and vicinity, Resource Controls performed test pits and soil borings, and installed monitoring wells at the disposal site, in two phases, in December 1997 and in March-April 1998. An evaluation for Immediate Response Actions (IRAs), based on the results of soil and groundwater analysis, show that no Imminent Hazards, condition of Substantial Release Migrations, or other time-critical site conditions are present at the disposal site and therefore, no IRA is required. However, the extent of contamination has not been fully delineated, and site conditions do not meet a condition of "No Significant Risk" as defined in the MCP.

Based on the foregoing, a Response Action Outcome (RAO) has not yet been achieved. However, the Phase I investigation provided sufficient information to meet the requirements of the Numerical Ranking System and Tier Classification process outlined in the MCP and additional Response Actions are necessary at the disposal site to attain a condition of "No Significant Risk."

PHASE I – INITIAL SITE INVESTIGATION REPORT 2 WOODBINE STREET PROPERTY TAUNTON, MASSACHUSETTS RTN 4-13850

SECTION 1.0 INTRODUCTION

The Massachusetts Department of Environmental Protection (MADEP) inspected the disposal site on October 22, 1996, and identified conditions that represented violations of provisions of the wetlands protection act and regulations, and the solid waste regulations. Subsequently, on September 23, 1997, the MADEP entered into an Administrative Consent Order (ACO-SE-97-R001-46) with the owners of the disposal site, and the City of Taunton. The ACO included requirements that assessment activities be conducted in accordance with the landfill regulations (310 CMR 19.000).

Initial subsurface investigations were completed during December 1997. In consideration of the findings of the initial investigations, the parties of the ACO agreed during a meeting held at the MADEP Southeast Regional Office on January 16, 1998, to proceed under provisions of Massachusetts General Laws (MGL) c. 21e and the Massachusetts Contingency Plan (MCP, 310 CMR 40.0000), with the understanding that the ACO would be revised to reflect the agreement.

The initial investigations completed demonstrated that disposal site conditions met the "120-day" notification requirements of the MCP. Based on the date of the draft report of the initial site investigations (January 2, 1998), which the MADEP agreed to accept as the date the City of Taunton obtained knowledge of disposal site conditions, the City submitted a Release Notification Form (BWSC-103) to the MADEP on May 1, 1998. The draft report has been incorporated into this Phase I report.

1.1 PURPOSE

Pursuant to the request by the City of Taunton, Resource Control Associates Inc., (Resource Controls) has prepared this Phase I – Initial Site Investigation Report in accordance with the ACO and provisions of the MCP (310 CMR 40.0480) for the Site assigned Release Tracking No. 4-13850 by the MADEP.

As discussed above, the initial investigations were conducted to meet the requirements of the solid waste regulations and the ACO. Activities conducted subsequent to the January 1998 meeting between the parties of the ACO were conducted to fulfill the requirements of the MCP and the ACO, rather than the solid waste regulations. The specific objectives of this investigation were to determine:

- the general nature and extent of the release(s);
- whether disposal site conditions might pose an Imminent Hazard to safety, health, or the environment;

- whether any further risk reduction measures are appropriate at the disposal site; or
- whether a demonstration could be made that a condition of "No Significant Risk" exists, or has been achieved, at the disposal site; and
- to compile appropriate information to allow Tier Classification of the disposal site.

1.2 SCOPE OF WORK

The following activities were performed to complete the Phase I – Initial Site Investigation:

- Resource Controls conducted a comprehensive inspection of the disposal site and reconnaissance of surrounding properties.
- Resource Controls performed a total of 11 test pits, and ten soil borings and installed monitoring wells in each of the borings. Three of the seven wells were installed on bedrock, and a bedrock core was obtained from one boring. Soil samples collected during initial drilling operations were screened in the field for volatile organic compounds (VOCs) using a portable photoionization detector (PID). Soil samples obtained during the subsequent drilling operations were screened in the field for VOCs using a PID, and selected samples were submitted to the laboratory for analysis for VOCs, extractable petroleum hydrocarbons (EPH), and polynuclear aromatic hydrocarbons (PAHs).
- Groundwater samples obtained from monitoring wells during the initial investigation were tested in the field for pH, conductivity and temperature, and were submitted to the laboratory for analysis for RCRA-8 metals, and copper, iron, manganese, and zinc; alkalinity, chloride, chemical oxygen demand, total cyanide, dissolved oxygen, total dissolved solids, nitrate nitrogen, and sulfate; and for VOCs. Groundwater samples obtained during the subsequent sampling event, were analyzed for VOCs, and EPH with PAHs.
- Top-of-casing elevations were surveyed and depth-to-water measurements were taken with an oil-water interface probe to assess whether nonaqueous-phase liquid petroleum was present and determine the horizontal direction of groundwater flow.
- Resource Controls completed this Phase I Initial Site Investigation report in accordance with MCP (310 CMR 40.0480), and evaluated whether Imminent Hazards, condition of Substantial Release Migrations, or other time-critical site conditions are present at the disposal site
- Resource Controls prepared a Phase I Completion Statement in conjunction with the Phase I Report.

In addition to the field investigations and documentation summarized above, the following research has been conducted:

- MADEP file review for the disposal site, potential sources, and abutters.
- Interviews and public file reviews of the City of Taunton Assessor's Office, Building Department, Engineering Department, Fire Department, Health Department, Sewer Department, and Water Department.
- Examination of Taunton Assessor's files, Registry of Deeds records, aerial photographs, and Polk's city directories for property use and ownership information;
- Review of a Massachusetts Geographic Information System (MAGIS) Site Scoring Map prepared for the disposal site; and
- General research and investigations of utilities, groundwater use and general environmental settings in the vicinity of the disposal site. This research included a review of water department records and a survey of area properties to determine if any private groundwater pumping wells are present in the vicinity of the disposal site.

1.3 PREVIOUS SITE INVESTIGATIONS

No site investigations are known to have been completed for the disposal site.

SECTION 2.0 GENERAL DISPOSAL SITE INFORMATION

2.1 RELEASE TRACKING NUMBER

The MADEP assigned Release Tracking Number 4-13850 for the disposal site on May 4, 1998.

2.2 LOCATION OF THE DISPOSAL SITE

The site locus is shown on Figure 1. The property is depicted on the Site Scoring Map (Fig. 2), Plat Map (Fig. 3), and Site Plan (Fig. 4).

The disposal site is located on a portion of 22 contiguous properties located at Woodbine Street, Oak Street, Oak Avenue, and Vinson Street, in the City of Taunton, Bristol County, Massachusetts 02780-4027. Although shown on the Assessor's Map, Woodbine Street is a "paper street" consisting of an access road to the disposal site. The City of Taunton Assessor's Map shows that the disposal site is situated on portions of Lots 34 and 39 in Block 35, on Plan 17, in Ward 7, covering a combined area of approximately 12.72 acres. The boundaries of the properties located within the disposal site are depicted on Fig. 3. The boundaries of the disposal site, to the extent they have been defined by assessments conducted to date, and the locations of on-site buildings and monitoring points (test pits and monitoring wells) are depicted on Fig. 4.

The disposal site is located at a latitude of 41° 53' 40" North, and a longitude of 71° 6' 50" West. The Universal Transverse Mercator (UTM) Coordinates of the disposal site are 4,640,000 m (meters) northing and 323,600 m easting.

2.3 SITE DESCRIPTION

The parcels on which the disposal site is located is currently vacant, with a past use as an unlicensed landfill. Three residences and an indoor skating rink are located on other parcels which form a part of the 22-parcel property.

2.4 ON-SITE WORKERS

The dwellings located at 1, 2 and 80 Woodbine Street, on parcels adjacent to the disposal site, are single-family residences. The two co-owners of the properties operate a roller skating rink located adjacent to disposal site, at 4 Woodbine Street. Landfilling operations formerly conducted on the disposal site have ceased. No structures are located on the disposal site itself. Based on the foregoing, there are currently no on-site workers.

2.5 RESIDENTIAL POPULATION WITHIN ONE-HALF MILE OF THE DISPOSAL SITE

Based on information provided by the U.S. Environmental Protection Agency Geographic Information Query System (http://www.epa.gov/r10earth), accessed on June 9, 1998, the population density within one mile of the disposal site is approximately 3,437 per square mile. Therefore, approximately 2,700 people reside within one-half mile of the disposal site.

2.6 LAND USES SURROUNDING THE DISPOSAL SITE

According to the City of Taunton Zoning Map (updated August 1996), the disposal site and nearby properties are located within an area zoned as "UR-2" (Urban Residential).

The properties abut Oak Avenue to the east and Oak Street to the south. The Maxham School (a City of Taunton elementary school) abuts the disposal site on the south and east, and multi-family residences owned by the City of Taunton Housing Authority abuts the disposal site on the west. Remaining properties abutting the disposal site on the north, east and south are single family residences. A multi-family residence, also owned by the City of Taunton Housing Authority, is located adjacent to the disposal site across Oak Street. No "Institutions," as defined by the MCP, exist within 500 feet of the disposal site.

Resource Controls inspected files at the Southeast Regional Office of the MADEP in Lakeville, Massachusetts on May 27, 1998. The lists of release sites, updated on May 5, 1998, showed that one site was identified within one-quarter mile of the disposal site: RTN 3-13311, the Maxham School property, abutting the properties on which the disposal site is located, at 141 Oak Street. On August 26, 1997, soil contamination was observed upon removal of two No. 2 fuel oil underground storage tanks. Approximately 63 cubic yards of soil was removed, and confirmatory analysis showed that a Response Action Outcome had been attained. No groundwater was encountered during the excavation. Based on the foregoing, conditions at the Maxham School site will not likely affect the disposal site.

2.7 NATURAL RESOURCES

As shown on the Site Plan (Fig. 4), an area of wetlands is located in the south central portion of the property, southwest of the skating rink. No vernal pools, ponds, lakes, streams, rivers, or reservoirs are located on the disposal site.

As shown on the attached Site Scoring Map (Fig. 2), Cobb Brook with associated wetlands is the nearest off-site body of water, located more than 500 feet northeast of the disposal site. No vernal pools, ponds, lakes, rivers, or reservoirs are located within 500 feet of the disposal site. The Site Scoring Map shows that none of the following natural resource areas are located on or within 500 feet of the disposal site: Zone II areas, Interim Wellhead Protection Areas, Zone A areas, Potentially Productive Aquifers, Areas of Critical Environmental Concern, Sole Source Aquifers, protected open space, fish habitats, or habitats of Species of Special Concern or Threatened or Endangered Species.

City of Taunton Water Department records show that all properties within 500 feet of the disposal site are connected to the municipal water supply system. In addition, the Water Department completed a survey of residences in the vicinity of the disposal site during March through May, 1998. A questionnaire on water use was sent to Water Department customers. On May, 1, 1998, the Water Department visited and inspected the properties for which responses were not received. The results of the survey show that no private water wells are known to exist within 500 feet of the disposal site. The questionnaires and report of inspection are attached as Appendix E.

SECTION 3.0 DISPOSAL SITE HISTORY

3.1 OWNER/OPERATOR AND OPERATIONS HISTORY

The properties on which the disposal site is located are owned by Leonel S. and Christine Rose, who purchased the properties in 1957 and 1961.

Based on information reviewed at the Bristol County, North District Registry of Deeds, the portion of the properties purchased in 1957 was formerly owned by Charles Ducharme, who purchased the parcel from Charles Alger in 1943. Charles Alger purchased the parcel from Florence Davol in 1920.

The portion purchased in 1961 was formerly owned by Ralph Davol. No back references were noted in the deed book listing, and the grantee/grantor books relative to this parcel were not clear.

Building permit records from 1946 through 1997 were reviewed at the City of Taunton Building Department. A permit was issued to Leonel Rose on May 9, 1950 to erect a roller skating rink platform. Additional permits were issued in 1950 to repair and "add to" an outdoor skating rink. Additions to the skating rink were permitted in 1951 and 1952. Additional permits were issued in 1956 (two-car garage at 2 Woodbine Street), 1972 (dwelling at 80 Woodbine Street), 1976 (repair of dwelling at 2 Woodbine Street), and 1987 (two-car garage at 80 Woodbine Street). The City of Taunton Assessor's records show that the skating rink was constructed in 1951, the dwellings at 1, 2 and 80 Woodbine Street were constructed in 1930, 1950, and 1981, respectively.

Polk's city directories listed the occupant of 1 Woodbine Street as Charles Mansfield in 1927 and 1928, and Manuel Lima in 1929. The address is shown to be vacant in 1930 and 1933. The address was occupied by Francis Silver in 1934 through 1937, and James Kenyon in 1938 and 1939. John Hogan occupied the address in 1941, and Leonel Rose, one of the current owners, is shown to occupy the address in 1942. From 1952, the address of Leonel Rose was shown to be 2 Woodbine Street. The skating rink was first listed in 1955 as 6 Woodbine Street, and was listed in 1960 as vacant. The skating rink was listed as 4 Woodbine Street in 1965, 1975, and 1980. The 1975 directory shows Allen Figueirdo as the occupant of 8 Woodbine Street, and the 1980 directory shows Allen Figueirdo as occupying 80 Woodbine Street.

Aerial photographs were reviewed at the City of Taunton Engineering Office. The aerial photograph from July 9, 1951 depicts the skating rink and the dwellings at 1 and 2 Woodbine Street. The remainder of the property appears to be wooded, with the exception of a clearing and a roadway leading into the southwest corner of the property from Oak Street several hundred feet west of Anderson Avenue. A photogrammatic plan derived from an aerial survey

conducted on April 16, 1968 depicts an access roadway leading into the disposal site from Oak Street, then decreasing about 30 feet in elevation and extending to the skating rink and out to Oak Avenue. Wetlands are depicted near the center of the disposal site, south of the access roadway. An upland area, rising approximately 12 feet in elevation, is depicted between the wetlands and the skating rink. In the landfill area, a ravine is shown north of Oak Street and east of the access road. An aerial photograph from May 1972 depicts the access road, and shows the clearing on the landfill area, and a clearing in the wetlands area west of the skating rink.

The ravine is not discernable from the 1951 or 1972 aerial photographs. In addition, no obvious fill areas are evident in the aerial photographs.

3.2 RELEASE HISTORY

On October 22, 1996, the MADEP inspected the disposal site and found that an area of approximately one acre and up to 30 to 40 feet deep had been filled with solid waste. Assorted accumulations of solid waste were found scattered in other areas on the disposal site. The MADEP observed some full paint cans and an old kerosene space heater, but did not otherwise observe hazardous waste. During the inspection, the disposal site owner presented to the MADEP a letter dated April 7, 1988 from the City of Taunton which expressed gratitude to the owners for allowing the City to use the disposal site as a landfill. The actual dates that disposal activities commenced and ceased, and the actual volumes, natures and sources of the waste streams to the landfill, have not been conclusively determined. The landfill is currently inactive.

According to information provided by the City of Taunton Building Department, materials known to have been disposed of at the landfill include construction and demolition debris (asphalt, concrete and brick) from a past reconstruction of Winthrop Street (State Route 44, Taunton). However, anecdotal information (citizen complaints) provided by the MADEP suggests that materials may have been disposed of at the landfill during the late 1980s by entities other than the City and may have included drums containing solvents or solvent-based materials.

Ernest Enos of the Taunton Health Department, and Captain Gallagan of the Fire Prevention Office of the City of Taunton Fire Department reported that they were not aware of any concerns relative to the disposal site or vicinity. However, Mr. Enos stated that he is aware of complaints filed in the past about dumping on the disposal site.

3.3 OIL AND HAZARDOUS MATERIALS USE AND STORAGE

With the exception of No. 2 fuel oil for building heating, contained in aboveground storage tanks, and the materials observed during the MADEP's inspection as described in Section 3.2, there is no record of oil and/or hazardous material use at the disposal site. Investigations completed to date have no revealed any oil or hazardous waste storage containers. However, dissolved volatile organic compounds have been detected in groundwater.

3.4 WASTE MANAGEMENT HISTORY

The skating rink and each dwelling in the area are served by individual septic systems. In addition, records provided by the City of Taunton Sewer Department showed that there are no connections from the sewer system to the properties on which the disposal site is situated.

As stated in Section 3.2, solid wastes from off-site sources were formerly landfilled on the disposal site. No waste materials are currently being landfilled on the disposal site.

3.5 ENVIRONMENTAL PERMITS AND COMPLIANCE HISTORY

No environmental permits have been issued for the disposal site. The MADEP through their inspection of the disposal site found the disposal site to be in non-compliance with provisions of wetlands regulations (310 CMR 10.00), promulgated under MGL c.131 §40, and solid waste regulations (310 CMR 16.00 and 19.000), promulgated under MGL c.111, §150A. No other violations, fines and other legal actions concerning landfill operations have been issued by federal, state or local agencies.

3.6 POTENTIALLY RESPONSIBLE PARTIES

On September 23, 1997, the MADEP entered into an Administrative Consent Order (ACO-SE-97-R001-46) with Leonel and Christina Rose, who own the disposal site, and the City of Taunton, which the ACO states endorsed and was engaged in the dumping/disposal of solid waste at the disposal site. Based on the foregoing, the Roses and the City of Taunton are Potentially Responsible Parties as defined in the MCP.

SECTION 4.0 SITE HYDROGEOLOGICAL CONDITIONS

4.1 SUBSURFACE INVESTIGATIONS

Subsurface investigations were planned and performed in consideration of meetings with representatives of the City and of the MADEP, and to assist the City in meeting conditions set forth in the ACO, including criteria spelled out in the solid waste regulations. The subsurface investigations were initially conducted to collect preliminary soil and groundwater data to characterize the nature of solid waste on the disposal site. Subsequent investigations were conducted to meet MCP requirements in accordance with an agreement made between the parties of the ACO in January 1998.

4.11 Scope of Work Implemented

The scope of work implemented for the subsurface investigation included the following items:

- Six test pits were installed at various locations between the "active front" of the filled area and Oak Street to determine the nature and extent of fill material in this area. Soil samples were visually inspected. Soil samples exhibiting discoloration and/or odors were screened in the field using a PID. The soil sample containing the highest PID reading was submitted to the laboratory for analysis for volatile organic compounds (VOCs).
- Five test pits were installed at various locations at the edge of the wetlands to determine the nature and extent of fill material in this area. Soil samples were visually inspected.
- Initially, four monitoring wells were installed to assess groundwater conditions and to allow the determination of the groundwater flow direction. Three monitoring wells were placed in apparent downgradient locations at the disposal site and one was placed upgradient. The monitoring wells were then developed.
- An additional six monitoring wells were subsequently installed at various locations, including one shallow and one deep well between the "active front" of the filled area and Oak Street, two shallow wells near the residence at 80 Woodbine Street and the skating rink, and two deep wells between the landfill area and the wetlands, to determine groundwater conditions at the water table and at the bedrock surface in these areas. A rock core was obtained at the deep well installed in the landfill area to observe the condition of bedrock. The monitoring wells were then developed.
- Groundwater samples obtained during the initial sampling event were analyzed to meet the criteria set forth in the solid waste regulations. Samples were submitted to the laboratory for analysis for RCRA-8 metals, and copper, iron, manganese, and zinc; alkalinity, chloride, chemical oxygen demand, total cyanide, dissolved oxygen, total dissolved solids, nitrate nitrogen, and sulfate; and VOCs by EPA Method 8260.

- During the subsequent sampling event, soil and groundwater samples were obtained for analysis for VOCs by EPA Method 8260, and EPH with PAHs by the MADEP Method.
- The analytical results were compared to MADEP soil and groundwater standards.

4.12 Test Pits and Soil Sampling

Resource Controls conducted a test pit program of the deeper fill area on December 18, 1997. The test pit program included performance of six test pits to depths of up to 11 feet. The test pits were performed by City of Taunton personnel under Resource Controls' direction. The locations of the test pits are shown on Fig. 3, and test pit logs are attached as Appendix A.

Test Pits 1, 2 and 3 were installed within 15 to 20 feet of the fence located near the property line at Oak Street. Near the fence, light brown sand was generally encountered from grade to a depth of approximately four to five feet. At depths of four to six feet, construction debris consisting of asphalt, concrete, and charred wood was encountered. The excavator bucket was damaged by a large concrete slab found at a depth of six feet in Test Pit 3. No odors were detected in the test pits installed near the fence.

Test Pit 4 was installed approximately 50 feet north of Test Pit 3 and 70 feet north of the fence. No odors were detected; however, construction debris, consisting of a signpost, bricks, concrete and asphalt was encountered at depths ranging from two to 11 feet.

Test Pit 5 was installed 50 feet north and 10 feet east of Test Pit 4, near the active front of the fill. Debris encountered at depths of one to four feet consisted of asphalt, brick, and concrete. A layer of black sand was encountered at a depth of four to five feet; however, no odors were detected. The sample was placed in an 8-oz. jar for headspace testing using a Photovac Model 101 portable photoionization detector (PID) fitted with a 10.6 eV lamp in accordance with established the Jar Headspace Method. The PID was calibrated and operated to yield total organic vapors in parts per million (ppm) v/v as benzene. The sample showed a PID reading of 4.2 ppm. At depths of five to eight feet, metal debris was predominant.

Test Pit 6 was installed 50 feet west of Test Pit 5. Concrete debris was encountered at a depth of 1 to 2 feet. Odors were detected in soil samples obtained from three to six feet. Headspace analysis of the samples showed 9.4 ppm at three to four feet, 27.8 ppm at four to five feet, 315 ppm at five to six feet, and 80.4 ppm at six to seven feet. The sample from three to five feet consisted of grey sand with a strong odor, and the sample from five to six feet consisted of fine grained soil and exhibited a strong odor. No odors were detected below six feet. Samples from six to eight feet below grade consisted of dark brown sand. The sample obtained from five to six feet below grade was submitted to the laboratory for analysis for VOCs.

On March 3, 1998, Resource Controls supervised the performance of test pits by City of Taunton personnel in the shallow fill area adjacent to the wetlands at the disposal site. The test pit program was conducted to obtain soil samples for visual and olfactory observation to confirm the nature of the fill material in this area.

A total of five test pits, to depths ranging from 2 to 4.5 feet, were performed, near the locations of MW-2, MW-3, and MW-4, as shown on Fig. 3. Surficial soils at the test pits generally consisted of brown sand, with materials such as concrete, asphalt, wood, and boulders. Excavation continued until a peat layer, indicating naturally placed soil, was encountered. Observations are documented on the attached test pit logs.

No odors or stains were observed in the soil exposed during excavation of the shallow test pits. The fill material observed in the test pits performed adjacent to the wetlands is consistent with road rubble, and there was no evidence of oil or hazardous materials in the shallow fill material. The shallow test pits were completed in the area near the wetlands (near the locations of MW-2, MW-3, and MW-4, as shown on Fig. 3) under the direction of Resource Controls.

4.13 Drilling

Resource Controls conducted an initial environmental drilling program on December 18, 1997, and a subsequent drilling program from March 31 to April 2, 1998. The drilling program in December 1997 included the installation of four overburden monitoring wells to obtain environmental data from the upper portion of the aquifer, at the water table surface. The drilling program completed in April 1998 included the installation of an additional three overburden wells to ascertain water table aquifer conditions at other locations on the disposal site, and three wells installed on bedrock to ascertain aquifer conditions at the bedrock surface. A rock core was obtained at one location to ascertain the condition of bedrock.

Monitoring Well Installation

Resource Controls constructed the monitoring wells in accordance with standard industry practice. Monitoring wells were drilled and installed by Cosmo Drilling Inc., a licensed well driller, under Resource Controls' direction.

The following is a summary of the types and locations of the four monitoring wells initially installed:

Monitoring Well	Well Type	Location
MW-1	shallow overburden	upgradient of fill area
MW-2	shallow overburden	downgradient of the fill area (NW)
MW-3	shallow overburden	downgradient of the fill area (N)
MW-4	shallow overburden	downgradient of the fill area (NE)

Each of the above monitoring wells was installed using hollow-stem auger drilling methods. Soil samples were obtained at five-foot intervals using split-spoon sampling techniques. Each well was constructed of two-inch inside diameter, Schedule 40, 0.020-inch slot PVC well screen and threaded riser pipe. Well screens were positioned to

span the apparent water table observed during drilling, and to extend five feet below the water table. Clean silica sand was used to backfill the annular space between each well and the boring sidewall to an elevation approximately two feet above the top of the well screen. Each well was sealed with bentonite above the filter pack and set at the surface with a locking steel standpipe secured in concrete. Complete well installation details are recorded in drilling logs included in Appendix B.

The following is a summary of the types and locations of the six monitoring wells subsequently installed:

Monitoring Well	Well Type	Location
MW-5	shallow overburden	cross-gradient of the fill area
MW-6	shallow overburden	downgradient of the fill area, near the dwelling at 80 Woodbine Street
MW-7	shallow overburden	downgradient of the fill area, near the skating rink at 4 Woodbine Street
MW-1D	deep overburden	upgradient of the fill area, near MW-1
MW-2D	deep overburden	downgradient of the fill area, near MW-2
MW-4D	deep overburden	downgradient of the fill area, near MW-4

Each of the monitoring wells was installed using hollow-stem auger drilling methods, with the exception of MW-1D (hollow stem augering to 25 feet, then drive-and-wash to 51.5 feet), and MW-4D (hollow stem augering to 15 feet, then drive-and-wash to 32 feet). Soil samples were obtained at five-foot intervals using split-spoon sampling techniques. Each well was constructed of two-inch inside diameter, Schedule 40, 0.020-inch slot PVC well screen and threaded riser pipe. Well screens were positioned in the shallow wells to span the apparent water table observed during drilling, and to extend five feet below the water table. The deep overburden wells were screened from the bedrock surface to a height of five feet above bedrock. Clean silica sand was used to backfill the annular space between each well and the boring sidewall to an elevation approximately two feet above the top of the well screen. Each well was sealed with bentonite above the filter pack and set at the surface with a locking steel standpipe secured in concrete, with the exception of MW-6 and MW-7, which were finished at grade with roadboxes due to their location. Complete well installation details are recorded in drilling logs included in Appendix B.

Subsurface Soil Sampling

During the installation of the monitoring wells, drillers conducted Standard Penetration Tests with a two-inch O.D., 24-inch-long split-barrel sampler, with which soil samples were retrieved, at five-foot depth intervals. Each sample was classified in the field and placed in an 8-oz. jar for headspace testing, as discussed in Section 5.1.

Well Development and Survey

The monitoring wells were developed subsequent to installation and prior to the collection of groundwater samples in order to enhance the hydraulic connection between the well screen and the natural formation or fill, and to ensure that the groundwater entering the well is representative of subsurface conditions. The wells were developed by manually surging and bailing the wells using a ball-valve bailer.

The locations of the monitoring wells and the elevations of the tops of monitoring well casings were surveyed relative to an arbitrary datum.

4.14 Groundwater Sampling

Groundwater sampling was conducted on December 22, 1997 and on April 8, 1998. During each sampling event, prior to collecting groundwater samples for field and laboratory analysis, the wells were purged a minimum of three well volumes. The pH, temperature and conductivity of the groundwater was monitored using field monitoring equipment. Development continued until the purged groundwater quality parameters stabilized.

4.2 SITE TOPOGRAPHY

Relative to the National Geodetic Vertical Datum (NGVD), the topographic elevation is approximately 44 feet at the east end and center of the disposal site, with a sharp rise to 76 feet at the west end of the disposal site. A deep ravine of over 15 feet in depth traverses the west end of the disposal site. The surrounding topography has a less pronounced relief. Regional topography is generally higher to the west and lower to the east.

According to the Flood Insurance Rate Map dated June 18, 1987, Community Panel 250066-0008C, the disposal site is within Zone X, outside the limit of the 500-year flood.

4.3 SITE GEOLOGIC AND STRATIGRAPHIC CONDITIONS

Disposal site geological and stratigraphic information was obtained from field observations and standard geological reference maps. Drilling logs provided detailed information about surficial stratigraphy.

4.31 Surficial Geology

Soils encountered during drilling outside the landfill area consisted of sands, gravels, cobbles, and silts consistent with the geology of glaciofluvial deposits. As discussed in Section 4.12, anthropogenic material was found in the soil in the landfill area at various depths. At the wetlands area, surficial soils generally consisted of brown sand, with materials such as concrete, asphalt, wood, and boulders to a depth of two to four feet, at which a two to four foot layer of peat was encountered. Sands, gravels, cobbles, and silts were encountered from the peat layer to bedrock.

Drilling logs, which include stratigraphic descriptions and PID readings, are included in Appendix B.

4.32 Bedrock Geology

According to information obtained from the Bedrock Geologic Map of Massachusetts, the disposal site is located in an area mapped as Upper and Middle Pennsylvanian Rhode Island Formation. The Rhode Island Formation is comprised of sandstone, graywacke, shale, and conglomerate with minor beds of meta-anthracite with fossil plants. The bedrock core obtained from the location of MW-1D corresponded to the literature description of bedrock in the area of the disposal site.

4.4 GROUNDWATER FLOW DIRECTION

Following development, the monitoring wells were gauged using an interface probe capable of measuring depths to water and to non-aqueous phase liquids, if present, to within 0.01 feet. The surveyed top-of-casing elevation of the monitoring well was used as a reference point. The monitoring wells were also gauged prior to collecting groundwater samples.

On December 22, 1997, depths to groundwater ranged from approximately six feet below grade at MW-4 in the northeastern portion of the disposal site, to 30 feet below grade at MW-1 at the southwest corner of the disposal site. On April 8, 1998, depths to groundwater ranged from approximately 0.5 feet below grade at MW-4D, to 24 feet below grade at MW-1, or approximately six feet greater in elevation than in December 1997. No non-aqueous phase liquids were found on the disposal site. The depths to groundwater with the reference top-of-casing elevations were used to calculate groundwater elevations (see Tables 1 and 2), which in turn were used to generate groundwater elevation contours, which are depicted on the site plan (Fig. 5). The contours show that groundwater flow on the disposal site is toward the northeast, at a generally uniform gradient of one foot per 200 feet (0.005 feet per foot).

SECTION 5.0 NATURE AND EXTENT OF CONTAMINATION

5.1 FIELD SCREENING

The results of Jar Headspace Method tests performed of the soil samples obtained during drilling in December 1997 and March - April 1998 yielded PID readings of 0 to 95.0 ppm, as shown on the drilling logs in Appendix B.

5.2 LABORATORY ANALYSIS CONDUCTED

5.21 Analysis of Soil Samples

The solid waste regulations do not require laboratory analysis of soil samples obtained during drilling. Since response actions were conducted under the MCP after the January 1998 meeting between the parties of the ACO, samples collected during drilling on March 31, April 1, and April 2, 1998 were analyzed for VOCs by EPA Method 8260, and EPH with PAHs by the MADEP Method. Laboratory certificates of analysis for soil samples are attached as Appendix C.

5.22 Analysis of Groundwater Samples

As required by the solid waste regulations, samples collected on December 22, 1997 were submitted to the laboratory for analysis for RCRA-8 metals, and copper, iron, manganese, and zinc, alkalinity, chloride, chemical oxygen demand, total cyanide, dissolved oxygen, total dissolved solids, nitrate nitrogen, and sulfate; and for VOCs by EPA Method 8260.

Samples collected on April 8, 1998 were obtained for analysis for VOCs by EPA Method 8260, and EPH with PAHs by the MADEP Method.

Laboratory certificates of analysis for groundwater samples obtained during both events are attached as Appendix D.

5.3 ANALYTICAL RESULTS

The analytical results listed below refer to the maximum concentrations of compounds detected in soil and groundwater samples obtained during subsurface investigations. These values will be used as a component of the Numerical Ranking System analysis which will determine the appropriate Tier Classification of the disposal site.

5.31 Soil

The results of analysis of soil samples obtained during the subsurface investigations are summarized on Table 3. As shown in the table, the maximum concentrations of VOCs detected in soil include 1,2,4-trimethylbenzene (281 μ g/kg); 1,3,5-trimethylbenzene (99 μ g/kg); naphthalene (40 μ g/kg); t-butylbenzene (38 μ g/kg); n-propylbenzene (34 μ g/kg); n-butylbenzene (31 μ g/kg); ethylbenzene (25 μ g/kg); xylenes (22 μ g/kg); 2-chlorotoluene (20 μ g/kg); methylene chloride (13 μ g/kg); isopropylbenzene (11 μ g/kg); and chlorobenzene (11 μ g/kg). No EPH fractions or target PAHs were detected in soil.

5.32 Groundwater

The results of analysis of groundwater samples obtained during the subsurface investigations are summarized on Table 4. As shown in the table, the maximum concentrations of VOCs detected in groundwater include trichloroethene (1,230 μ g/L); acetone (385 μ g/L); cis-1,2-dichloroethene (375 μ g/L); chlorobenzene (300 μ g/L); 1,1-trichloroethane (200 μ g/L); 1,2,4-trichlorobenzene (69 μ g/L); 1,1-dichloroethane (64 μ g/L); 1,2-dichlorobenzene (51 μ g/L); 1,2,3-trichlorobenzene (43 μ g/L); vinyl chloride (36 μ g/L); xylenes (15 μ g/L); 1,1-dichloroethene (12 μ g/L); 1,4-dichlorobenzene (11 μ g/L); benzene (9 μ g/L); chloromethane (8 μ g/L); toluene (7 μ g/L); tetrachloroethene (6 μ g/L); trans-1,2,-dichloroethene (6 μ g/L); chloromethane (4 μ g/L); 1,3-dichlorobenzene (1 μ g/L); and 1,1,2-trichloroethane (1 μ g/L).

The maximum concentrations of PAHs detected in groundwater include phenanthrene (1.13 μ g/L); fluoranthene (0.66 μ g/L); pyrene (0.58 μ g/L); benzo[b]fluoranthene (0.28 μ g/L); 2-methylnaphthalene (0.27 μ g/L); benzo[a]anthracene (0.26 μ g/L); chrysene (0.26 μ g/L); benzo[a]pyrene (0.24 μ g/L); acenaphthene (0.23 μ g/L); and anthracene (0.21 μ g/L). No EPH fractions were detected.

The maximum concentrations of metals of potential concern detected in groundwater include zinc (0.16 mg/L) and lead (0.1 mg/L).

No non-aqueous phase liquid was found at the disposal site.

5.4 ESTIMATE OF HORIZONTAL AND VERTICAL EXTENT OF CONTAMINATION

Based on the foregoing results and the results of analysis summarized on Tables 3 and 4, groundwater contamination has been found to extend from the water table to bedrock with concentrations of contaminants generally consistent with depth. Laterally, groundwater contamination was found to extend to at least the southwest and most upgradient corner and of the properties on which the disposal site is located. The extent of contamination in the upgradient

direction has not been fully delineated as of this writing. Downgradient of the landfill area, significant groundwater contamination was found at the edge of the wetlands area, but has not been found adjacent to the dwelling at 80 Woodbine Street or the skating rink at 4 Woodbine Street. Therefore, the horizontal extent of contamination in the downgradient end of the disposal site is at locations shown on the site plan to be between MW-6 and MW-2, and between MW-7 and MW-2, 3 and 4. No soil contamination was found in areas beyond the known extent of groundwater contamination.

SECTION 6.0 POTENTIAL CONTAMINANT MIGRATION PATHWAYS AND EXPOSURE POTENTIAL

6.1 MIGRATION PATHWAYS

Potential migration pathways in all environmental media have been identified and evaluated, and the relative health and environmental risk associated with each pathway is summarized in Table 5. Agricultural activities, commercial fishing, and hunting do not occur at the disposal site. No pathways related to surficial soil or food chains have been identified. As summarized in Table 5, the relative risks associated with air, surface water, groundwater, and soil conditions are considered to be low.

6.2 HUMAN EXPOSURE

Based on the possible disposal of hazardous materials at the disposal site, Resource Controls has identified only one type of potential human exposures that could occur under current disposal site conditions: Excavation of solid waste from the landfill area. However, soil analytical data collected to date do not indicate conditions that exceed applicable soil standards. No buildings or utilities will likely be installed in the landfill area.

In the foreseeable future, there is a potential for air exposure, if buildings designed for human occupancy were to be installed near monitoring wells MW-2, MW-3, and MW-4, where "GW-2" groundwater standards are exceeded.

6.3 ENVIRONMENTAL RECEPTORS

As stated in Section 2.7, an area of wetlands is located in the south central portion of the property. However, no natural resource areas (Zone II areas, Interim Wellhead Protection Areas, Zone A areas, Potentially Productive Aquifers, Areas of Critical Environmental Concern, Sole Source Aquifers, protected open space, fish habitats, or habitats of Species of Special Concern or Threatened or Endangered Species) are located on or within 500 feet of the disposal site. The disposal site investigation has obtained no physical evidence of a past or continuing release of oil and/or hazardous materials at or from the disposal site to surface waters and/or wetlands which significantly affects environmental receptors. No evidence of biologically significant harm was found with current exposure of wildlife, fish, shellfish or other aquatic biota to oil and/or hazardous material at or from the disposal site. However, the full nature and extent of contamination at the disposal site has not been delineated. Based on the possible disposal of hazardous materials, there is a potential for biologically significant harm to environmental receptors.

SECTION 7.0 EVALUATION FOR IMMEDIATE RESPONSE ACTIONS

This Phase I investigation incorporates an evaluation the disposal site for Imminent Hazards, conditions of Substantial Release Migrations, or other time-critical conditions that would constitute criteria for conducting one or more IRAs. The MCP requires that an evaluation for IRAs consider "actual or likely exposures to human and environmental receptors under current disposal site conditions, considering the current use(s) of the disposal site and the surrounding environment, and considering an appropriately short period of time." No changes in disposal site uses are anticipated in the short term.

An "Imminent Hazard" is defined in the MCP as "a hazard which would pose a significant risk of harm to health, safety, public welfare, or the environment if it were present for even a short period of time." With respect to subsurface of soil-related exposures at sites that might pose an Imminent Hazard, the concentration of oil in accessible surficial soil to a depth of six inches are considered in the development of exposure point concentrations. For the evaluation of drinking water exposures, the concentrations of oil or hazardous materials in groundwater or surface water which serves as the source of drinking water are considered. As shown on Tables 3 and 4, exposure point concentrations in soil and groundwater meet applicable standards for current uses of the disposal site.

No release to the environment which would result in the presence of oil and/or hazardous material vapors within buildings, structures, or underground utility conduits at a concentration equal to or greater than ten percent of the Lower Explosive Limit or of reactive or explosive hazardous material, as described in 310 CMR 40.0347, was reported or observed during the Phase I Investigation. Based on the foregoing, disposal site conditions do not represent an "Imminent Hazard."

In addition, the disposal site does not exhibit conditions that require a "Two-Hour" or a "72-Hour" notification; no evidence of Substantial Release Migration has been found at the disposal site; and no other time-critical conditions that would constitute criteria for conducting one or more IRAs have been identified. Therefore, in accordance with 310 CMR 40.0412, no IRAs are required at the disposal site.

SECTION 8.0 CONCLUSIONS

The Phase I investigation documented herein was conducted to meet the requirements of the ACO in effect between the MADEP and the potentially responsible parties associated with the disposal site located at 2 Woodbine Street in Taunton, Massachusetts. Investigations were initially conducted to meet the requirements of the solid waste regulations, as stipulated in the ACO, and the focus of the investigation was subsequently directed to meet MCP requirements, based on a meeting held between the parties of the ACO in January 1998.

Based on the findings of the Phase I investigation, Resource Controls offers the following conclusions:

- The Phase I investigation provided sufficient information to meet the requirements of the Numerical Ranking System and Tier Classification process outlined in the MCP.
- Based on an evaluation for Immediate Response Actions, no Imminent Hazards were identified at the disposal site and no other Immediate Response Action criteria have been identified.
- The extent of contamination has not been fully delineated, and site conditions do not meet a condition of "No Significant Risk" as defined in the MCP.
- Based on the foregoing, a Response Action Outcome (RAO) has not yet been achieved.
- Comprehensive Response Actions are necessary at the disposal site to attain a condition of "No Significant Risk."

SECTION 9.0 LIMITATIONS AND REPORT AUTHORIZATION

This report addresses the environmental characteristics of the subject property with regard to the release of or possible presence of oil and/or hazardous materials. It is not intended to guarantee that the subject property is or is not free from conditions, materials or substances which could adversely impact the environment or pose a threat to public health and safety. Rather, it is intended to be used as a summary of available information on existing conditions, the conclusions of which are based upon a reasonable and knowledgeable review of evidence found in accordance with normally accepted industry standards, State or Federal protocols, and within the scope and budget established with the client. Should further research on the subject property be warranted, any additional data obtained must be reviewed by Resource Controls and the conclusions presented herein may be modified accordingly.

This report in total has been prepared on behalf of and for the exclusive use of Taunton Development Corporation, solely for use in an environmental evaluation of the subject property. This report or any part thereof, may not be altered, used, relied upon or reproduced by any party other than as specified by the Taunton Development Corporation, without first obtaining written permission from Resource Controls. All terms, conditions and limitations as defined herein and in Appendix F, shall apply.

Conclusions stated herein are based on the available information summarized herein and refer only to the specific subject property investigated. No warranty is implied or given and the report is subject to the terms and conditions of the contract.

This report has been prepared and reviewed by the undersigned staff in accordance with Resource Controls' standard Quality Control Procedures.

Robert C. Atwood, P.E., LSP

President and CEO

Patrick D. Corcoran

JOB NO.: A4640

Project Environmental Engineer

JOB NAME: <u>Taunton – Woodbine</u> DATE: <u>October 16, 1998</u>

TABLES

TABLE 1 SURVEY DATA

LOCATION	GUN	ROD	GUN	WELL RIM
	NUMBER	ELEVATION	ELEVATION	ELEVATION
Surveyof 12/22/9	97			
MW-2	1	7.04	107.04	100.00
MW-3	1	9.85	107.04	97.19
MW-4	1	10.66	107.04	96.38
Turn 1	1	3.77	107.04	103.27
Turn 1	2	19.53	122.80	103.27
Turn 2	2	9.93	122.80	112.87
Turn 2	3	7.98	120.85	112.87
MW-1	3	0.66	120.85	120.19
Survey of 04/08/	98	= 7,	***	
MW-1	1	2.10	122.29	120.19
MW-1D		4.72	122.29	117.57
MW-1	2	0.29	120.48	120.19
MW-5	2	8.81	120.48	111.67
MW-4	3	3.07	99.45	96.38
MW-4D	3	4.83	99.45	94.62
MW-2	4	0.06	100.06	100.00
MW-2D	4	3.46	100.06	96.60
MW-6	4	1.97	100.06	98.09
Turn 1	4	6.03	100.06	94.03
Turn 1	5	4.75	98.78	94.03
MW-7	5	5.55	98.78	93.23

NOTE:

- 1. All figures in feet.
- 2. Elevations are relative to an aribitrary datum.

TABLE 2 GROUNDWATER ELEVATION SUMMARY

LOCATION	WELL RIM	DEPTH TO	EQUIV. G.W.
	ELEVATION	GROUNDWATER	ELEVATION
Gauging of 12/22/97			acieria, mentra esperante de la compositione de la composition della composition del
MW-1	120.19	29.69	90.50
MW-2	100.00	10.40	89.60
MW-3	97.19	7.72	89.47
MW-4	96.38	6.88	89.50
Shallow Well Gaugii	ng of 04/08/98		
MW-1	120.19	23.71	96.48
MW-2	100,00	4.91	95.09
MW-3	97.19	2.57	94.62
MW-4	96.38	1.69	94.69
MW-5	111.67	15.37	96.30
MW-6	98.09	3.73	94.36
MW-7	93.23	0.76	92.47
Deep Well Gauging	of 04/08/98		Art Court of the C
MW-1D	117.57	20.75	96.82
MW-2D	96.60	2.10	94.50
MW-4D	94.62	0.48	94.14
Approximate Bedro	ck Elevations	(to Bedrock)	(Bedrock Elev.)
MW-1D	117.57	50.00	67.57
MW-2D	96.60	27.00	69.60
MW-4D	94.62	32.00	62.62

NOTE:

- 1. All figures in feet.
- 2. Elevations are relative to an aribitrary datum.
- 3. No non-aqueous phase liquid was detected.

TABLE 3 SOIL ANALYTICAL SUMMARY

LOCATION	TP-6	MW-1D	MW-2D	MW-4D	MAXIMUM	S-1	S-2	S-3
DEPTH	5 - 6 FT.	20 - 22 FT.	15 - 17 FT.	15 - 17 FT.	ŀ	STANDARD	STANDARD	STANDARD
DATE	12/18/97	_04/01/98	04/02/98	04/02/98				
Volatile Organic Compounds (μg/kg)								
n-Butylbenzene	31	-	•	•	31	-	-	-
t-Butylbenzene	38	-	-	-	38			-
Chlorobenzene	< 10	< 10	11	< 9	11	40,000	40,000	40,000
2-Chlorotoluene	20	-	-	-	20	-	-	-
Ethylbenzene	25	-	-	-	25	500,000	500,000	500,000
Isopropylbenzene	11	-	-	-	11	-	-	-
Methylene Chloride	13	< 10	< 7	< 9	13	100,000	200,000	700,000
Naphthalene	40	-	-	-	40	100,000	1,000,000	1,000,000
n-Propylbenzene	34	•	-	-	34	-	-	-
1,2,4-Trimethylbenzene	281	-	-		281	-	-	-
1,3,5-Trimethylbenzene	99	-	-	-	99	-	-	•
Xylenes	22	-	-	-	22	300	400	400
Other volatile organic compounds	ND	ND	ND	ŅĎ	ND	Detectio	n limits below stan	
Extractable Petroleum Hydrocarbons (mg/kg)							44.00
C9-C18 Aliphatics	•	< 29	< 29	< 29	< 29	1,000	2,500	5,000
C19-C36 Aliphatics	-	< 29	< 29	< 29	< 29	2,500	5,000	5,000
C11-C22 Aromatics		< 29	< 29	< 29	< 29	800	2,000	5,000
Polynucelar Aromatic Hydrocarbons (ıg/kg)					74		
Acenaphthene	-	< 392	< 392	< 383	< 392	1,000,000	2,500,000	4,000,000
Acenaphthylene	-	< 392	< 392	< 383	< 392	100,000	1,000,000	1,000,000
Anthracene	•	< 392	< 392	<:383	< 392	1,000,000	2,500,000	5,000,000
Benzo[a]anthracene	•	< 392	< 392	< 383	< 392	700	1,000	4,000
Benzo[a]pyrene	-	< 392	< 392	< 383	< 392	700	700	700
Benzo[b]fluoranthene	-	< 392	< 392	< 383	< 392	700	1,000	4,000
Benzo[g,h,i]perylene	-	< 392	< 392	< 383	< 392	1,000,000	2,500,000	2,500,000
Benzo[k]fluoranthene	-	< 392	< 392	< 383	< 392	7,000	10,000	40,000
Chrysene	-	< 392	< 392	< 383	< 392	7,000	10,000	40,000
Dibenzo[a,h]anthracene	-	< 392	< 392	< 383	< 392	700	700	800
Fluoranthene	-	< 392	< 392	< 383	< 392	1,000,000	1,000,000	1,000,000
Fluorene	-	< 392	< 392	< 383	< 392	1,000,000	2,000,000	4,000,000
Indeno(1,2,3-cd)anthracene	•	< 392	< 392	< 383	< 392	700	1,000	4,000
2-Methylnaphthalene	-	< 392	< 392	< 383	< 392	500,000	1,000,000	1,000,000
Naphthalene	-	< 392	< 392	< 383	< 392	100,000	1,000,000	1,000,000
Phenanthrene	-	< 392	< 392	< 383	< 392	100,000	100,000	100,000
Pyrene	-	< 392	< 392	< 383	< 392	700,000	2,000,000	5,000,000

NOTES:

- Samples obtained on dates shown.
 µg/kg = micrograms per kilogram (parts per billion)
- mg/kg = milligrams per kilogram (parts per million)
 S-1, S-2, and S-3 = Massachusetts Contingency Plan standards for soil categorized as S-1, S-2, and S-3 respectively.
- 5. ND = not detected.
- 6. (Dash) indicates no sample or standard.

TABLE 4
GROUNDWATER ANALYTICAL SUMMARY

	MW-1 12/22/97	MW-1 04/08/98	MW-1D 04/08/98	MW-2 12/22/97	MW-2D 04/08/98	MW-3 12/22/97	MW-3 04/08/98	MW-4 12/22/97	MW-4D 04/08/98	MW-5 04/08/98	MW-6 04/08/98	MW-7 04/08/98	MAXIMUM	GW-2 STANDARD	GW-3.
Volatile Organic Compounds (µg/L)		04100130	04/00/30	, LLLU	0 1100/00										
Acetone	< 100	-	-	< 100	•	< 100	-	385	-	-	-	•	385	50,000	50,000
Benzene	< 5	< 1	< 1	9	< 1	< 5	< 1	< 5	<1	< 1	< 1	< 1	9	2,000	7,000
Chlorobenzene	< 5	< 1	< 1	< 5	. 2	64	126	250	300	<1	< 1	<1	300	1,000	500
Chloroform	< 5	< 1	2	< 5	<1	< 5	1	< 5	2	5	8	<1	8	400	10,000
Chloromethane	< 5	<1	< 1	< 5	< 1	< 5	< 1	· <5	· 4 15	<1 <1	<1 <1	′ <1 <1	51	10,000	8,000
1,2-Dichlorobenzene	< 5	< 1	< 1	16	2	15	51 1	13 < 5	15 <1	< 1	<1	<1	31	10,000	8,000
1,3-Dichlorobenzene	< 5	< 1	< 1	< 5	<1	< 5	11	< 5	2	<1	<1	<1	11	30,000	8,000
1,4-Dichlorobenzene	< 5	<1	< 1	< 5	< 1 10	< 5 19	19	64	27	<1	<1	< 1	64	9,000	50,000
1,1-Dichloroethane	< 5	<1 <1	< 1 < 1	11 < 5	< 1	< 5	2	< 5	12	<1	<1	<1	12	1	50,000
1,1-Dichloroethene	< 5 10	5	<1	200	125	79	325	350	375	<1	<1	<1	375	30,000	50,000
cis-1,2-Dichloroethene	10 < 5	5 < 1	< 1	< 5	2	< 5	4	6	3	<1	< 1	<1	6	20,000	50,000
trans-1,2-Dichloroethene	· <5	<1	<1	< 5	4	< 5	6	< 5	4	< 1	< 1	2	6	3,000	5,000
Tetrachloroethene	< 5		` '	< 5	-	< 5		. 7	-	•		-	7	6,000	50,000
Toluene 1,2,3-Trichlorobenzene	< 5	-	•	8	, -	16	-	43			-	-	43	•	-
1,2,4-Trichlorobenzene	· <5	<u>-</u>	-	9	< -	27	-	69	-	-	-	-	69	-	-
1,1,1-Trichloroethane	11	11	< 1	39	175	48	11	175	275	1	< 1	< 1	275	4,000	50,000
1,1,2-Trichloroethane	< 5	<1	< 1	< 5	< 1	< 5	< 1	< 5	1	< 1	< 1	< 1	1	20,000	50,000
Trichloroethene	230	160	< 1	950	1,230	255	1,050	725	775	13	< 1	. <1	1,230	300	20,000
Vinyl chloride	< 10	< 1	< 1	< 10	< 1	< 10	< 1	36	< 1	< 1	< 1	< 1	36	2	40,000
Xylenes (total)	< 5	-	-	< 5	-	< 5	-	15	•	-	-	-	15	6,000	50,000
Extractable Petroleum Hydrocarboni	s (mg/L)											<u> </u>			
C ₉ -C ₁₈ Aliphatics	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	د 20
C ₁₉ -C ₃₆ Aliphatics	•	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	50 .
C ₁₁ -C ₂₂ Aromatics	-	< 0.5	< 0.5	-	< 0.5	-	< 0.5	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	50	30
Polynucelar Aromatic Hydrocarbons	(ua/L)			-											
Acenaphthene	-	0.23	< 0.2		< 0.2	-	< 0.2	•	< 0.2	< 0.2	< 0.2	< 0.2	0.23	-	50,000
Acenaphthylene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	3,000 >
Anthracene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	•	< 0.2	< 0.2	0.21	< 0.2	0.21	-	3,000
Benzo[a]anthracene	•	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	0.26	< 0.2	< 0.2	0.26	-	3,000 =
Benzo[a]pyrene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	0.24	< 0.2	< 0.2	0.24	•	3,000
Benzo[b]fluoranthene	-	< 0.2	< 0.2	. •	< 0.2	-	< 0.2	-	< 0.2	0.28	< 0.2	< 0.2	0.28	-	3,000
Benzo[g,h,i]perylene	-	< 0.2	< 0.2	-	< 0.2	•	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	-	3,000 =
Benzo[k]fluoranthene	•	< 0.1	< 0.1	•	< 0.1	-	< 0.1	•	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	•	3,000 s 3,000 s
Chrysene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	0.26	< 0.2	< 0.2	0.26 < 0.2	-	3,000
Dibenzo[a,h]anthracene	•	< 0.2	< 0.2	•	< 0.2	-	< 0.2	-	< 0.2	< 0.2	< 0.2 < 0.2	< 0.2 < 0.2	< 0.2	•	3,000
Fluorene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2	•	< 0.2 < 0.2	< 0.2 0.66	0.53	< 0.2	0.66	_	200
Fluoranthene	•	< 0.2	< 0.2	-	< 0.2	•	< 0.2	-	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2		3,000
Indeno(1,2,3-cd)anthracene	-	< 0.2	< 0.2	-	< 0.2	-	< 0.2 < 0.2	-	< 0.2	0.27	< 0.2	< 0.2	0.27	10,000	3,000
2-Methylnaphthalene	-	< 0.2 < 0.2	< 0.2 < 0.2	-	< 0.2 < 0.2	•	4.0	-	< 0.2	< 0.2	0.59	< 0.2	4	6,000	6,000
Naphthalene	-	< 0.2 < 0.2	< 0.2 < 0.2	•	< 0.2	<u>.</u>	4.0 < 0.2	_	< 0.2	0.72	1.13	< 0.2	1.13	-	50.
Phenanthrene	-	< 0.2 < 0.2	< 0.2	-	< 0.2	-	< 0.2	-	< 0.2	0.72	0.46	< 0.2	0.58	_	3,000
Pyrene Metals (mg/L)	•	~ U.Z	~ U.Z	-	- 0.2	_	- 0.2		V.2	V					************
Arsenic	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	-	-	-	< 0.1	-	30
Barium	< 0.2	- -	_	< 0.2	-	< 0.2	-	< 0.2	-	-		-	< 0.2	2	7
Cadmium	< 0.01	-		< 0.01	-	< 0.01		< 0.01	-	, -	•	•	< 0.01		0.01
Chromium	< 0.05	-	-	< 0.05	-	< 0.05	-	< 0.05	- "	-	-	-	< 0.05	-	2
Copper	< 0.02	-		< 0.02	•	< 0.02	-	< 0.02	-		-	-	< 0.02	-	-
Iron	0.2			0.2	•	0.5	• •	. 3.6	•	-	-	-	3.6	-	-
Lead	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	-	•	-	0		0.3
Manganese	0.24		-	0.24	-	1.82	-	1.34	-	-	-	-	1.82	-	
Mercury	< 0.0005	-	-	< 0.0005	-	< 0.0005	-	< 0.0005	-	•	-	•	< 0.0005		0.001
Selenium	< 0.1	- '		< 0.1	-	< 0.1	-	< 0.1	-	•	-	•	< 0.1	-	0.08
Silver	< 0.01	-	-	< 0.01	-	< 0.01	•	< 0.01	•	-	-	•	< 0.01	-	0.007
Zinc	< 0.05	-	٠.	0.16	-	< 0.05	-	< 0.05	_•				0.16	-	0.9

NOTES:

- Samples obtained on dates shown.
 μg/L = micrograms per liter (parts per billion)
 mg/L = milligrams per liter (parts per million)
 GW-2 and GW-3 = Massachusetts Contingency Plan standards for groundwater classified as GW-2 and GW-3 respectively.
 (Dash) indicates no sample or standard.

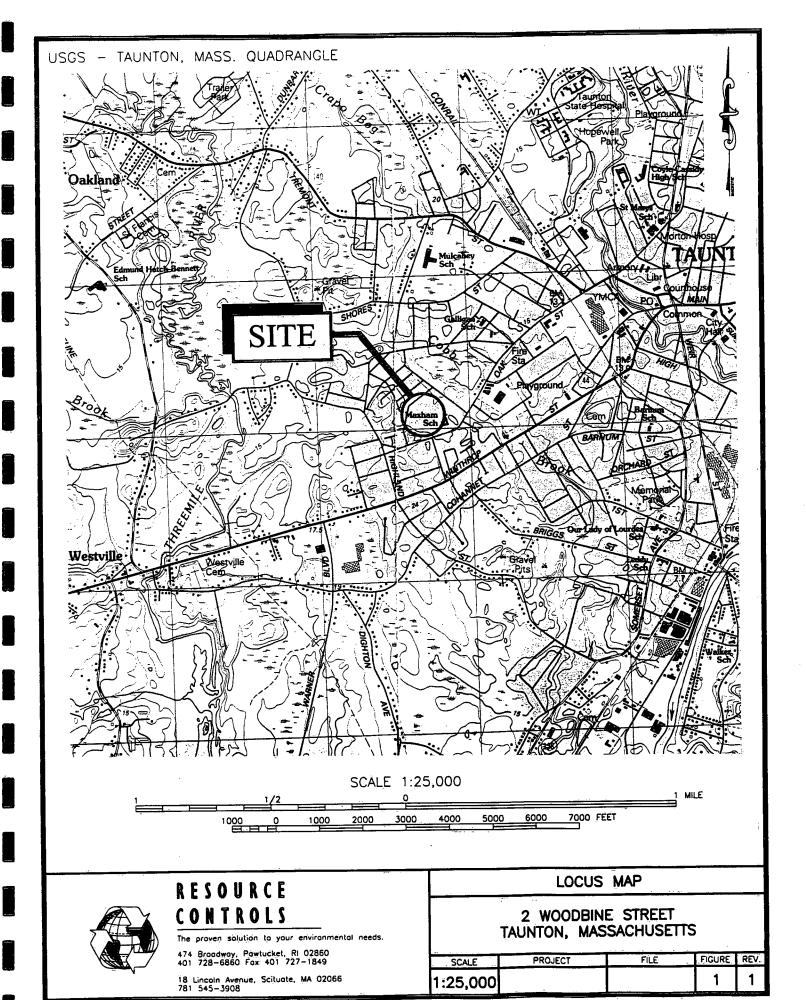
2 WOODBINE STREET TAUNTON, MASSACHUSETTS

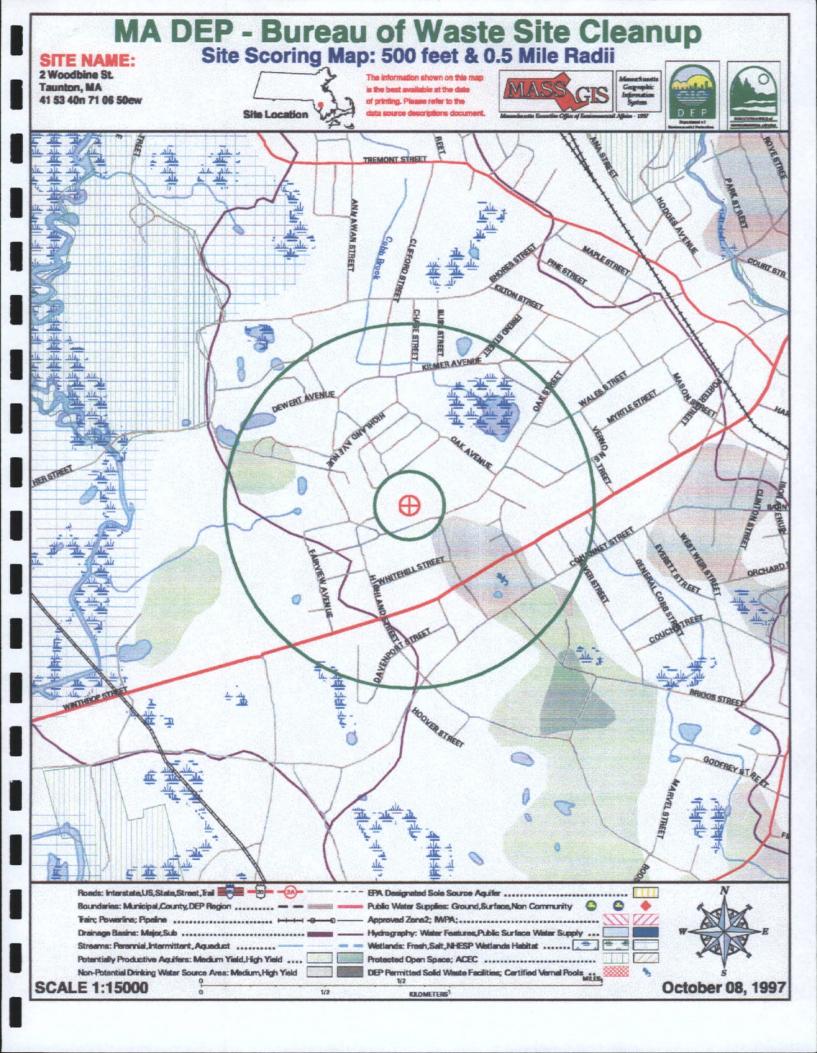
TABLE 5

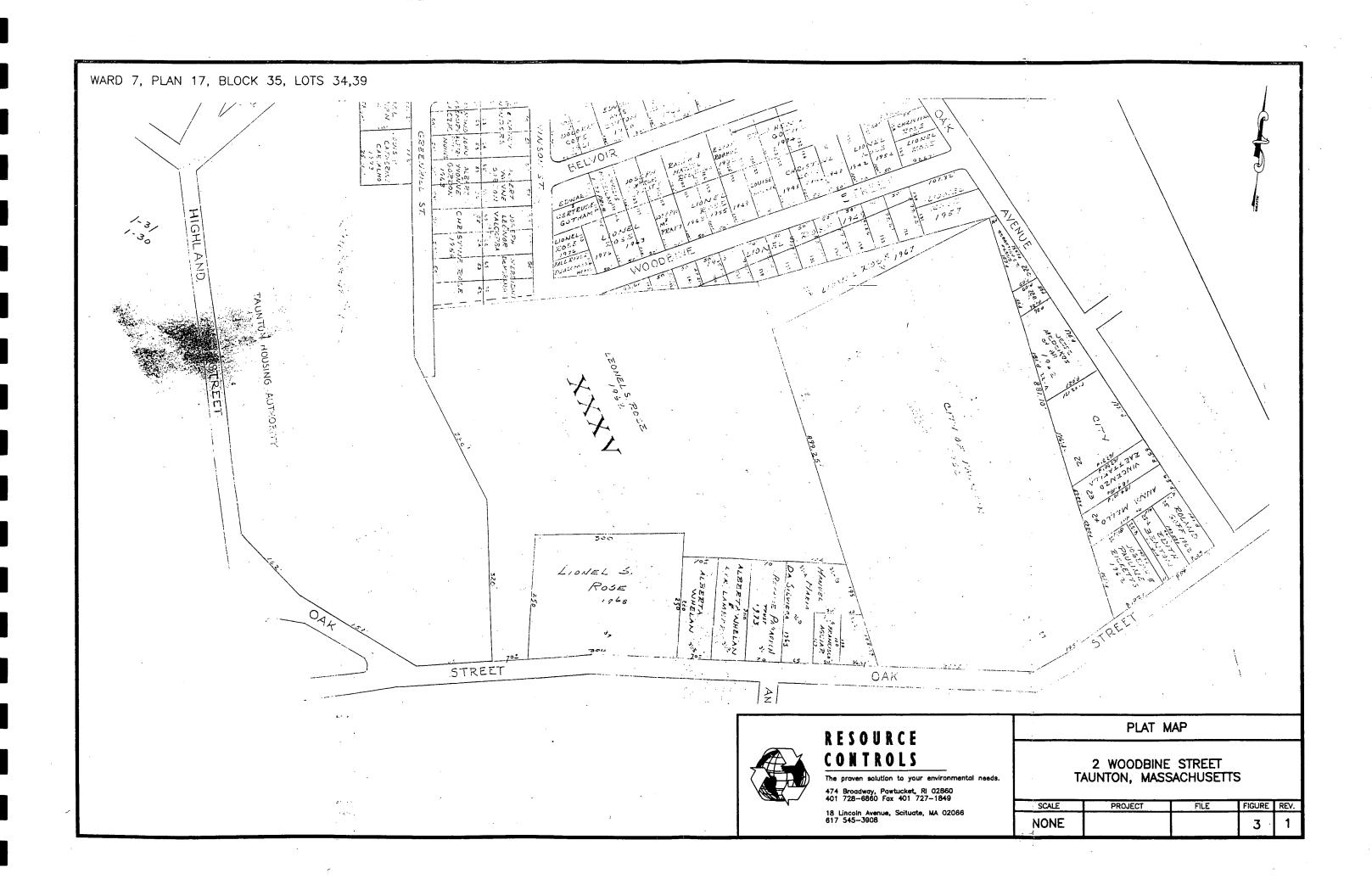
SUMMARY OF POTENTIAL EXPOSURE PATHWAYS AND EVALUATION OF HEALTH AND ENVIRONMENTAL RISK

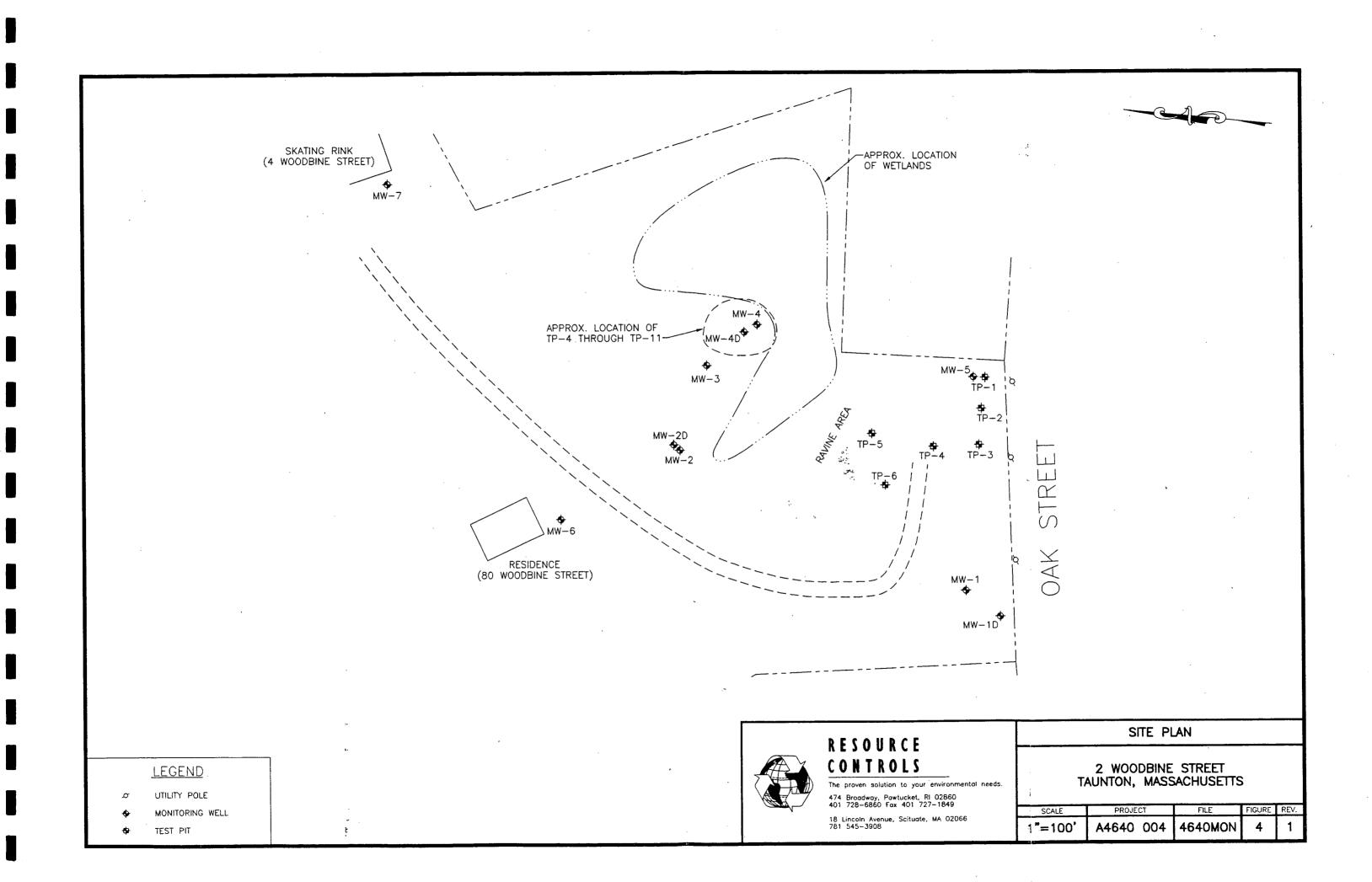
PATHWAY	DESCRIPTION	RELATIVE RISK
Air	Monitoring wells MW-6 and MW-7 were installed within 30 feet of the dwelling at 80 Woodbine Street, and the skating rink, respectively. Groundwater samples from these wells met "GW-2" standards. Other wells installed at the Site are not proximate to any occupied structure. No elevation PID readings were obtained from surficial or shallow soils during drilling.	Low
Soil	The shallowest soil contamination identified on Site is at approximately three feet below grade at the landfill area. No significant soil contamination was found outside the landfill area. The only potential exposure would be workers during excavation within the landfill area at the Site.	Low
Groundwater	Volatile organic compounds and polynuclear aromatic hydrocarbons been reported in groundwater at the Site. However, the Site is not located within Zone II of a public water supply, a Potentially Productive Aquifer, or an Interim Well Head Protection Area, and is not known to be located within 500 feet of any private drinking water well.	Low
Surface water	Volatile organic compounds and polynuclear aromatic hydrocarbons been reported in groundwater at the Site, at levels below "GW-3" standards which are protective of surface water. However, wetlands are located on-Site downgradient of the landfill area.	Low

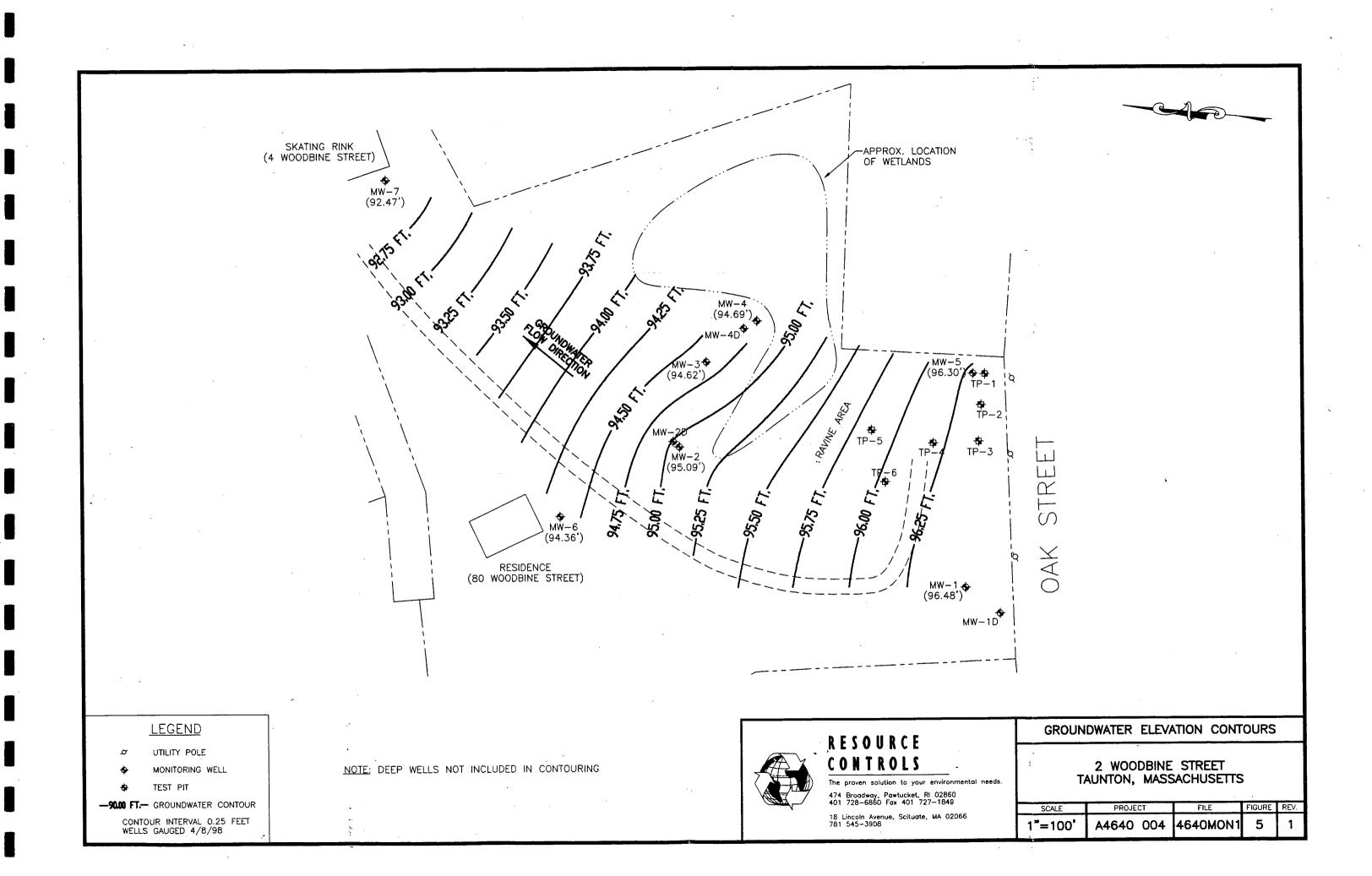
FIGURES











APPENDIX A

Test Pit Logs



RESOUR (. f							
CONTRO	-	Project:			Location:			
ASSOCIATES, II		CITY OF	TAUNTON		2 WOODBINE	57.		· Ta
Test pit di		Face of Test F	It logged:	***	Date excavated:	7	Project N	77-1
15 × 5	XIU	EAST			12-18-97	0850	A464	
Depth to w				Excavat	ed by:		1 11107	Logged by:
Surface ele	ENCOUNTE	RED	1 	MIKE	LEVINE			PDC
Surrace en	evation:		Surface cond	diflous:			T	TUE
DEPTH	Sample		VEGETA	TED ;	GRASS / WEEDS , B	RUSH	Elevation	PID
(feet)	No.	j		Desc	ription		(feet)	Readings
1.559						· · · · · · · · · · · · · · · · · · ·		(ppm)
0'-4'	j	LICHT ROL	Sint Can IN			· .		
		LIGHT BRE	700 3110D	2 NO C	DOR			
4-5'		BROWN SAN	In ! Anna	· /2	3'-6'); PAPER		4	
		SOME CHAR	257 (2013	ces cs	3 -6); PAPER			
		Same Carrie	CED WOOD	, No	ODOR		4	
5'-10'		DARK BRO	WAL GAVIN	<u> </u>				
			DA SHOD,	NO O	DOK.			
10'	1	BOTTOM OF	E EVOL- 0	10-1		· · · · · · · · · · · · · · · · · · ·		
		ASTION OF	EXPUBR	ALIDN				
			- 18		·		1 1	
]	
							1	
			·				1	1
				·			1	
							1	
								
				<u> </u>	** · · · · · · · · · · · · · · · · · ·			
							i	
					15	-,		·
		·			5 7			
			-		16	,	. [
								•
			O OAK S	T.		•	i	
		1 P<	OLE		POLE	POLE	j	
		 						ļ
					-4 10' k-		1	j
		1/2					ļ	
						· ·	į	
					- 24		•	·
							1	
								1
	Groundwale							Summary
Date	Time	Depth/Ft.		<u> 5 </u>	10 = 750 CL	ı. Ft.	Ī	Depth: 10'
			(L)	(W)	(D)			Samples: NONE
								rumpies. 74772
<u> </u>		8	" to 18" Diam:	110 _	" Vol		Cu. Ft.	
			ver 18" Diam:	No				rest Pit No.
				_	æ ₹₹₩		Su. Ft.	TP-1



אטענזה								
CONTR		Project:		line	ation:			
ASSOCIATES,	INC.	CITY OF 7	MANTON			-		
Test plt d	lmensions:	Face of Test Pi	Llogged		WOODBINE S	7.		TP-2
	5 × 10		cioggiia.		e excavated:	_	Project N	o.: Sheet No.:
Depth to	water:	J			2-18-97	0000	A464	10
		_		excavated by			-	Logged by:
701 6	NCONTERL			MIKE LE	VINE		ļ	PDC
Surface e	levation:		Surface condit	llons:			1	- 70C
<u> </u>			VEGETATED	. GRASS /	WEEDS; BRUST	4	Elevation	
DEPTH	Sample			Description	<u> </u>	*	4	, , , –
(feet)	No.			Dancipac	11		(feet)	Readings
		-			 		<u> </u>	(ppm)
0'-4'					<u> </u>			
0-9	4	LIGHT BRO	WN SAND,	GRAVEL,	NO ODOR		}	
	4							
4'		LOG (WOOD)	2' / FNG	74 30 7	A		! !	
		ANRAITE RI	CANAL CANA	<u> </u>	HMETER.		!!	
41-10'	7	COBOLES, NA	WWW SAND	, ASPANIA	, CHARRED WOO	DING DOOR	i !	
	†						! !	
4-10'	-{	LIGHT BROW	W SAND Y	+ GRAVEL	NO ODDR		1	
	4						i !	
10'	}	BOTTOM OF	EXPLORAT	n ml			1	
	1			757	· · · · · · · · · · · · · · · · · · ·		1 1	
	1	J				·	i j	
	-{						i	1
	4						i I	
	4							
L	ł						ı I	
	1		·····					
	1							
	1	·		·				
	-	 			<u> </u>		. 1	
<u> </u>		<u></u>				1.1.1.1.1.1		
L	İ						ŀ	
							l:	
	1						1	
	1	· 						
ļ	.[1	
]		L 56'	_				
<u> </u>	İ		— 6. 33 —		······································		1	
	1.		···	15			1	
	1						1	
	1		· •	10'			l	
	ł 1				2		ł	
<u> </u>			Ô	0	——————————————————————————————————————		l	
i			POLE		0		1	
			POLE	POLE	POLE		1	
		·						
		OA1	c street				- 1	
<u></u>								
			· · · · · · · · · · · · · · · · · · ·					
							1	
	1			····	 			
		·					1	
	<u></u>						I	
	Groundwate	er				L		Çı,mma
Date	Time	Depth/Ft.	15 v	5 v 1	<u>0 = 750 cu</u>	. 24	l.	Summary
			(L)			ı. rt.		Depth: NO'
	·			(W) (I	D)			Samples: NONE
		. <u></u>						,
]8"	to 18" Diam:	tio	' Vol		Cu. Ft.	
			ver 18" Dlam		" Vol			F-4 BU AI
		····	con vo comi	110.	VUI	······································	Cu. Ft.	Test Pit No.
							i	TP-2



CONTR			··				
ASSOCIATES.		Project:	Įi.	ocation:			
		CITY OF MUNTON		2 WOODBINE	57		TP-3
	lmensions:	Face of Test Pit logged:		ate excavated:		18:-I	
	5×6	<u> </u>	1	12-18-97	0930	Project N	
Depth to			Excavated	by:	0930	A464	
NOT E	NCOUNTER	ED	MIKE I				Logged by:
Surface e	levation:	Surface con	dillone:	2071100		·	PDC
				/WEEDS; BRUS			
DEPTH	Sample		Descrip	Theens, plans	M	Elevation	PID
(feet)	No.	İ	Descrip	ouon		(feet)	Readings
			-;			<u> </u>	(ppm)
0-2'	-	214 244 / 643					
	-1	DARK BROWN SAND	COBBLES	(3"-6"), No	DIOR.]	
2-3'	={					1 !	
123	-{	LIGHT BROWN SANK	3'-6	" COBBLES, NO	ODOR	1 /	
1 2	4			_		1 1	
3-5'	4	WOOD, RUG (REMNA	INT), BL	ASS PIECES BOY	II THEN (12 4)	1 .	
]	1	CONCRETE, ASPHALT	NO CZ	ne			
	J					j l	
6"	1	BANNER RADIE O	1010000			ļ	
	1	BACKHOE BROKE BU	ICKET TE	eth on conce	ete sab	1 1	
	1	END OF EXPLORATION				1 1	
 	1					i i	
}- 	1					1 1	
 						1	
	1					1	
						,	
	j						
	1					1	
	1						
	1						
	1		·				
	i	-9 /5' Jun-					
	1	7 10					
	ĺ	5 -	于			İ	
		15	20'			j	
			4				•
						. [
		POLE		<i>o</i>		- 1	
	1		POLE	POLE			
			-ST			.1	
		N				1	
			خننسنه حصمت			1	
	i						
		<u> </u>					
	•			72-	7		
						1	
				***		j	
						i	
<u>-</u> L	Gran	<u> </u>				}	
Data	Groundwate	er					Summary
Date	Time	Depth/Ft/5_x_	_5 x _	6 = 450 Cu	. Et	ŀ -	
l		(L)	(W)	(D)	• • •		Depth: 6'
				<u> </u>		S	Samples: NONE
		0"1- 10" 5"				L	
		8" to 18" Diam:		" Vol	(Su. Ft. 📑	
·		Over 18" Diam:	No	" Vol	(Ju Ft T	est Pit No.
						· ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	TP-2



V C 3 A A A		6					
CONTRO		Project :	· · · · · · · · · · · · · · · · · · ·	Location:			
ASSOCIATES, II		CITY OF TAUNTON	1				
Test pit die	nensions:	Face of Test Pit logged		2 WOOD BINE ST.		·	<i>TP-4</i>
	5 × 10	P. desig of Tasset Telloggist	r;	Date excavated:		Project N	o.: Sheet No.:
Depth to w	votor:	J <u></u>		12-18-97	1000	A464	9
		2	Excavat				Logged by:
7001 60	V COUNTERE		MIKE	LEVINE			PDC
Surface el	evation:		conditions:				- PUL
		VE6ET	ATED, GR	ASS / WEEDS		Elevation	
DEPTH	Sample		Desc	cilption			PID
(feet)	No.			si ili di conti		(feet)	Readings
		•					(ppm)
0-1	1					! !	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	ł	LIGHT BEOWN SA	MD, NO OF	DOR]	
	ļ						
1-2	ł	18" BOULDER M	DNCRETT	, ASPHAT, DAKE SA	15 41- 0		
	J		<u> </u>	, aserma, Denz Sh	ע <i>סא</i> כשא	poe	
2-10	1	CONCRETE MOU	h × *	50.0			
2000]	CONCRETE, KSPHI	CANADA ANK	NO ODOR		İ	
		4 METER S					
		8' BRICKS	GLASS, ST	YROFORM CUP			
 		l					
10		END OF EXPLORE	TON.				
						- 1	
						1	
						•	
		——————————————————————————————————————				Į.	
						1	
							
						ſ	
						1	
1 7						Ī	
						1	
			194	f	<u></u>		
						- 1	
ļ		50'				1	
ļI							
		1		2		ĺ	İ
	. [<u> </u>		1	
	1						
	ł	<u> </u>					1
	ł	OAK	72			1	j
	j,					1	1
	į					j	. [
						1	
	ĺ					i	1
	ŀ	10				1	
	į	<u> 4</u>					ĺ
	ļ		·			i	
	Į.			~		ſ	į
	1					Ī	i
	Groundwate	r					
Date	Time	Depth/Ft. 15	, 5	10 = 750 cu. Ft.		L	Summary
		Jepanie,	. × ـــــــــــــــــــــــــــــــــــ	=		C	epth: 10'
 [-		(<u>L)</u>	(W)	(D)		Īŝ	amples: NONE
		<u></u>				<u></u>	
		8" to 18" D	iam: No _	" Vol			
		Over 18" [,(
———— <u>I.</u>			aciii. 1910	" Vol	C	20. Ft. T	est Pit No.
	l	<u></u>					TP-4



A E S O U R (•
CONTRO	ŧ	Project :			Location:		
ASSOCIATES, IN		CITY OF T	MUNTON		2 WOODBINE ST		TP-5
Test pit dir	nensions:	Face of Test F	It logged:		Date excavated:	12	
	5 × 8				12-18-97	Project i	
Depth to w	nter:			Excavat	ed by.	A 46	
NOT EN	COUNTER	Ø)		MIKE	LEVINE	1020	Logged by:
Surface ele	evation:		Surface cond	dillons.	<u></u>	1020	POC
					ASS /WEEDS	Elevation	
DEPTH	Sample			Desc	cription	(feet)	···
(feet)	No.				• •	(leet)	Readings
				غبين نيفت سنده ت			(ppm)
0-1		LIGHT BRO	CUAS LICH	086	ANIC / WOOD / LEAVES, NO		ļ
		ODOR		,	TEAUCE, NO		
						- 22 -	ł
1-9		DALK BROW	MUAZ LA	A< 0+10-	Beick BOTTLE, WOOD	 -	<u> </u>
		CONCRETE,	Na cook	HALIMIE	Tablote, 2011te, WOOD,		
				<u> </u>	<u> </u>		1
4-5	TP-5-1	BLACK SAN	N N 0	N 00			1./2
		7/16	-, NV 0	II OIL			4.2
5-6		PARER C-	O C C C C C C C C C C C C C C C C C C C	.4.5.36			
		10 00-0	NCKETE,	METAL	, CLOTH PLASTIC, BRICK,		
		NO ODOR					
6-7		14 55045 -1					
P		METAL, N	o odpre				
8	4	Alexan					
		METAL, A	10 ODDR				
		8					
_&		BOTTOM	OF EXPLOS	عضمم			
							
							
							
 		, 					
		ļ 					
							
					TP 5		
ļ[A	1			-	
		N	50)			
			1				
,			•	****			
		-	TP4	-,			
			1.4)				
12.2					k	_	
			· · · · · · · · · · · · · · · · · · ·				
							
						_]	
-			·	 			
<u></u>		L.,,,,,,,,,,,,,,,				-	
D=1-1	Groundwat		15				Summary
Date	Time	Depth/Ft.	<u>/3</u> x.	x	8 = 600 cu. Ft.	ł	Depth: 8'
			(L)	(W)	(D)		Samples:
				·			TP-5-1 4-5'
			8" to 18" Diam:	tio _	" \/ol		11-3-1 4-3'
			Over 18" Diam:	_	· · · · · · · · · · · · · · · · · · ·	Cu. Ft.	
			Assi to Digiti.	: No	" Vol	Cu. Ft.	Test Pit No.
		l					TP-5



K 6 2 17 17 K	()				
CONTR() l	Project:	Location:		
ASSOCIATES, 1	NC.	CITY OF TAUNTON			
Test plt di		Face of Test Pit logged:	2 WOODBINE ST		TP-6
15 x		Ludge of Test Fit logged;	Date excavated:	Project N	lo.: Sheet No.:
Depth to v		<u></u>	12-18-97	A464	
			Excavated by:	1.7.10	Logged by:
NOT EN	COUNTERET		MIKE LEVINE	1035	
Surface el	evation:	Surface conc	diffons:		PDC
		VEGETAT	ED; GENTS/WEEDS	المالية المالية	
DEPTH	Sample	1	Description	Elevation	
(feet)	No.		D (menhaori	(feet)	Readings
	1	BROWN			(ppm)
0-1	1				
<u> </u>	1	LIGHT SAND, 6"	COBBLES, NO ODOR	} /	
	4			1	
1-2	4	PIECE OF CARPET	2" COBBLES DANK BROWN SAND	1 1	
]	NO ODOR	<u> </u>	1 !	
L	j			1 1	
2-3	1	CONCRETE, NO ODOR		1 1	
		CONCRETE NO ODDR		1 1	
2 4	m.]	
3-4	TP-6-1	GREY SAND, ODOR		1 1	9.4
				1	
4-5	TP-6-2	GREY SAND, STRONG	S ODDR	i i	27.8
	j			1 1	21.0
5-6	TP-6-3	CLAY / SLUDGE, STRO	and and	1 1	
		sure, sure, sim	ING CODIC	1 1	315
6-7	TP-6-4			!!!	
0	" 0 "	DARK BROWN SAND,	NO DAOR	i i	80.4
				ł l	•
7-8		STAK BROWN SAND	NO ODOL	l I	
				i f	
. 8		BOTTOM OF EXPLORATIO		1	
		The same of the sa	~		
				ı	
<u> </u>					
·		TPE	TP5		
				1	•
<u> </u>				ŀ	
		 	50'		
				i	
		N			
···					
				. 1	
	}				
	1				
				I	
				i	
	Groundwate	er l			
Date	Time	Depth/Ft. 15 x	5 x 8 = 600 Cu. Ft.	J.	Summary
		X		-	Depth: 중
		(<u>L</u>)	(W) (D)	[Samples:
	1				TP-6-1, TP-6-2
		8" to 18" Diam:	tlo" Vol		
i		Over 18" Diam:			1P-6-3, TP-6-4
		SASI 10 CHEIR	. IVO VOI	Cu. Ft.	Test Pit No.
		.		į	TP-6



RESOUR								
CONTR		Project:			Location:			
ASSOCIATES, I					アドーフ			
Test pit di	mensions:	Face of Test P	It logged:		Date excavated:		12	
5 × /	0 × 4		6,4		3/2/68	1200	Project N	o.: Sheet No
Depth to v	O × 4	···		Excaval	ad pv.	0800	A46	
	2				3/3/98 ed by: CITY OF TA	10001		Logged by:
Surface e	levation:		Surface con	ditions:	Or Th	LAUTUN		PDC
				timornia.				
DEPTH	Sample		<u> </u>	Docc	liption		Elevation	
(feet)	No.			Dusc	infracti.		(feet)	Readings
	1		· ····					(ppm)
	1	C 11 6 3 6 7	19	1-12-				
	1	SURFACE	<u>-6 - 1</u>	IEGETA	DON			
	-[7" 111					1	
·	1	6"-1/2		V SANI	<u> </u>	1		
	-{		CONCR	OTE SI	AB]]	•
	-		ASPHA	LT			1	
	4	<u> </u>					1	
	1	WATER -	2% FT	(MAT	CHUS SURFACE F	701	1	
	1	OF WE				ec V	1	
	J				· · · · · · · · · · · · · · · · · · ·		1	
	1	3/2-41	ET - Or	717			4 1	
-	1	7 7 7	PEI	7/			4 i	
	1				· · · · · · · · · · · · · · · · · · ·		1 1	
	1		····					
	1] [
] [
	ĺ]	
	ĺ						1 1	
							1 1	·
·····							1 1	
							1 1	
				·			! [
		,					f ,	•
) 	0	1			l i	
		·		2/2		· · · · · · · · · · · · · · · · · · ·		
						·		
	·	 					1	
· · · · · · · · · · · · · · · · · · ·	•		wes	/_				
·			188	70707			I	
			MW-Y	0				
					[Sien	1 M M - 1		
) 		7	Condfill]	
				. 7				
					· · · · · · · · · · · · · · · · · · ·			
				·				
								
	Groundwate							
Date	Time		10	~	./ 2==			Summary
Date	inne	Depth/Ft.	x .	x.	/ _ = <u>200</u> cu.	. Ft.	· li	Depth:
			(L)	(W)	(D)			Samples:
						· · · · · · · · · · · · · · · · · · ·		
		ŗ	3" to 18" Diam:	: tlo _	" Vol		.Cu. Ft.	
			Over 18" Diam					F4 DW 14
· · · · · · · · · · · · · · · · · · ·			CALALIT	. 190	VOI.		Cu. Ft.	Test Pit No.
		L					- 1	



RESOURC	F							
CONTRO	t	Project :		ال الم	cation:			· · · · · · · · · · · · · · · · · · ·
ASSOCIATES, IN					TP-8			
Test pit din		Face of Test F	'It logged:	5	ate excavated:		Project No.	: Sheet No.:
5×10	7×2-	<u> </u>			313/98	0810	Project No. A 4640	
Depth to wr	nter: , ,	2	[E:	xonvaled l	CATY OF TH	1	L	ogged by:
		<u> </u>	,		CALA OF 1-4	NOTON		POG
Surface ele	evation:		Surface condition	ions:				
		- ₉	<u> L</u>			<u> </u>	Elevation	PID
DEPTH	Sample			Descript	ion		(feet)	Readings
(feet)	No.						 -	(ppm)
			- ASPHATT				- 1	
		SUCHEC	- FTSF/FFCI				1 1	
		TO 2' -	- CONCRET				- I	•,
		10-2-	ASPHART				1 1	•
			BRAWN S				1	
			The Total of The	ב ויטויק			1 1	
		PEAT AT	2'				1 1	
							1 1	
		1,1277.78	POURING	10/			1 1	
		MACE	<i>poed 11</i> ()	/ <u>/ </u>			1 1	
			 			· ************************************	1 (
							1 1	
		· · · · · · · · · · · · · · · · · · ·	·		- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	~	1 1	
						",	1 1	
		· · · · · · · · · · · · · · · · · · ·					1	
		***********					1 1	
				**************************************			1 1	
		1	······································		· · · · · · · · · · · · · · · · · · ·		1 1	1
					· · · · · · · · · · · · · · · · · · ·		1 1	
						· · · · ·	1 1	
							1	
]	
] [
]	100
				Honds]	
			we'					
					OTP-7]	
			06	0-	0 11]	
			78-18 20' M	MW4 10]	
		<u> </u>	16 20']	
]	
·			0] [
		l	29					
		\ <u></u>	• • • • • • • • • • • • • • • • • • •					
		<u></u>	•	· · · · · · · · · · · · · · · · · · ·				<u>.</u>
	Groundwa]	٠				Summary
Date	Time	Depli/Ft.			2 = 100 cu	, Ft.	ĪĒ	Depth:
			(L)	(W)	(D)		S	amples:
					· · · · · · · · · · · · · · · · · · ·	1 10 1 10 100		*
		1	8" to 18" Diam;	No	" Vol	5 35	_Cu. Ft.	
			Over 18" Diam		5.88			est Pit No.
	L		·	,			'	



RESOUR							
CONTR		Project :		Location:			
ASSOCIAITS, I			<u> </u>	TP-9			
Test plt di	nonsions:	Face of Test F	It logged:	Date excavated:		Prolect M.	o.: Sheet No.:
5×	0×2	<u></u>	70.00	3/3/98	0815	Project No. A 4641	SUBSTING!
Depth to v	vnter:	 	Exca	raled by:	, , , ,	1.709	Logged by:
NOT	ENCOUNT	ralas		CITY OF TAUN	Tool		Fofidag ph:
Surface el	evation:		Surface conditions:	LALL OF HOIN			PDC
1				•		Elevation	ÞΙD
DEPTH	Sample	1	<u></u>	escilption			
(feet)	No.		Ų.	····		(feet)	Readings
1-1-1-1	1				32 1. **********		(ppm)
1	1	G. 200=	- 0-2:50-	=1 / = = -			
<u> </u>	1 -	U.GENICE	HALITY.	SAND, VEGITATIO	~		
	1						
 	1	10 1	SAND, GRAVE	T, COSSIET			
	1			· · · · · · · · · · · · · · · · · · ·			
ļ	1	WOOD			·		•
J	1					l	
ļ		PIRT A	T 2'			İ	
	į						
]						
1	ì						•
]	1			····		Į	
}	i						•
}	1	} 					
	1]- 				i	
	1	<u> </u>	 				
}			, ; 			i	
 			·				•
<u> </u>							
l		<u> </u>					
				713 (a. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.			
		l				1	
						1	
		}					
		<u> </u>				I	
		l		·		ľ	
	•	}					
		ļ				1	
		J					
	' -			- · · · · · · · · · · · · · · · · · · ·		1	
						ŀ	
						. 1	
· 					· - · · · · · · · · · · · · · · · · · ·		•
			······································				
						ł	
				······································		į	
		<u></u>					
	Groundwat		· · · · · · · · · · · · · · · · · · ·				Summary
Date	Time	Depth/Ft.	_/O_x_5	x 2 = /00 cu	ı. Ft.	i	Depth:
			(L) (W)	(D)			Samples:
				<u> </u>			Janupes.
			89 1_ 189 51 · ·	n		L	
 ,							
			Over 18" Dlam: No	" Vol		Cu. Ft.	Test Plt No.
		<u> </u>					



CONTRO	ì	Project :			Location:			
ASSOCIATES, IN					TP.	-10		
Test pit din		Face of Test F	Il logged:		Date excavated:		Project N	o.: Sheet No.:
Depth to w	0x 4.5				3/3/98	0820	A464	O.: Sheet No.:
Depth to w	nter:			Excavale	d by:		1 1 10 7	Logged by:
NOT	ENCOUNT	£6)	• 	<u> </u>	CITY OF TH	PUNTON		POG
Surface ele	valion:		Surface cond	litions:				
DEPTH	1 3i.	·	L				Elevation	PID
(feet)	Sample No.	<u> </u>		Desci	iption		(feet)	Rendings
(1000)	140.		· ····					(ppm)
	1						4	
		SIZEA	e - VET		201		1	
			V.E.	291.54.116	,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>		1	•
		6"-1"	- SAND,	Ciav	FIL		1	
							1	
		1-11	CONCRET	25-			1	
			WOUN				1	
			ASPHAN]	
			BOULDON					
		PEAT AT	4/21					
		} 		 		·]	
	•	[1	!
							1 1	
							1	
			· · · · · · · · · · · · · · · · · · ·				1	
								
							1	·
					· · · · · · · · · · · · · · · · · · ·		1 1	
							1	
		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·]	
]	
	•							
} 		——————————————————————————————————————] }	
		<u>-</u>					i i	
		-MIDWRY	BUTWEE	M MU	~-3 AND A	1w-4.		
		·]	
	•							
								
							{	
		· · · · · · · · · · · · · · · · · · ·					<u> </u>	
				· · · · · · · · ·		 	{	
	· · · · · · · · · · · · · · · · · · ·						1 1	
	Groundwat		//	<u></u>				Summary
Date	Time	DepllyFt.			4.5 - 225	_Cu, Ft.	ļ	Depth:
			(L)	(W)	(D)	a 		Samples:
-		·						
<u> </u>			9" to 18" Diam	: No _	" Vol		_Cu. Ft.	
<u> </u>			Over 18" Dlam	ii No. 🗕			_Cu. Ft.	Test Plt No.
			<u></u>					l



RESOUR	(F							
"CONIŖ(D L	Project :			Location:			
ASSOCIÁTES, F		· .			77	- //		
Test pli di	monsions:	Face of Test P	It logged:		Date excavated:		Project N	o.: Sheet No.:
3 ×	10 × 4.5	J			3/3/98	0825	Project N A46	(A)
Depli to v				Excavale	od by:			Logged by:
Surface of	EN COUNT	EX EX	Surface cond	<u> </u>	CITY OF	TAUNTON		PDC
Statuce 6.	gvidori.		Suriace cond	30118;				
DEPTH	Sample	1	L	Doco	iption		Elevation	PID
(feet)	No.			Desc	i ikanoji i		(feet)	Readings
	1							(ppm)
]	SUEGACE	- VEGLTA	DOW	· · · · · · · · · · · · · · · · · · ·		-	
]					·	 j	
	_	62067	ARK BROWN	UN CA	27			•
	4			_				
<u> </u>	4	1'-BK	OWN SAN	D/GEA	VEL			
	-1	WOOD				····	_}	
	4	CONCRE				·	_	
I	-}	- DOUDET	<u>20.</u>				_	
	· ·	100				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_{	
	-	4 7 FT	- PEAT	· · · · · · · · · · · · · · · · · · ·			_	
·	1]	···			2 May 2 May 2	-1 1	;
ļ	1						i i	
	1	<u></u>					- .	
	1							
	1						-1 1	
]			··· • • • • • • • • • • • • • • • • • •			=	
]						7 1	•
	1			 			7	
	į							
 							_	
	1	<u> </u>					_	
-	ľ						_	
· 	1	<u> </u>					- ∤ !	
	1						-1 1	4
	i				0 -		!	
	ĺ	- 			7W -		-1 1	
]	<u> </u>	()	····		·	-	
]		120:1		4		-1 1	
	}			- 11 - 11 - 12 - 12 - 12 - 1	000	· · · · · · · · · · · · · · · · · · ·	-	
	Ì	, , , , , , , , , , , , , , , , , , , ,			<u> </u>	··· ··································		
]							
	<u> </u>						<u> </u>	
 ,	Groundwal		10		ــە ــە ار			Summary
Date	Time	Depilv/Ft.	_/ <u>/</u> _ x		<u>45 - 22</u>	S_Cu. Ft.		Depth:
· -	 		<u>(L)</u>	(W)	(D)			Samples:
	 _					J. 100		
	\	(, ,	8" lo 18" Diam	i: 110 _	" Vol			
	<u>1</u> ;		Over 18" Dlam	1: No.			Cu. Fl.	Test Plt No.
L								_

APPENDIX B

Drilling Logs



RESOURCE

CONTROLS

PROJECT:

PROJECT NO .:

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

BORING NO.

MW-1

1

PAGE I OF DATE STARTED:

12/18/97

DATE FINISHED:

12/18/97

SURFACE ELEVATION:

DRILLED BY:

COSMO Frank/Kenny

INSPECTED BY:

DRILLING CO.:

Mark House

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME 29' N/A

TYPE: SIZE I.D.: CASING HSA

SAMPLER Split Spoon 1-1/4"

HAMMER WT.:

3-3/4" 140 lbs.

HAMMER FALL:

30 in.

	SAMPLING			DATA	1	STRATA		FIELD TEST
DEPTH	ÖEPTH		PERCENT	BLOWS PER	WELL	CHANGE		DATA
(FT.)	(FT.)	ID	RECOV.	6 INCHES	DATA	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 e
	FROM - TO							(ppm)
	0'-2'	S-I	10%	3-18-76-19			LOAM (sandy) with cobbles	
]	1		
		,			1 14 11	j		
					1 11 11	1	i .	
5'					1	1	·	
	5'-7'	S-2	15%	2-2-3-3	1		Reddish-brown silty SAND, trace fine gravel, moist, lo	30.0
					1			
			t		1 1 1	l .		
			· · · · · · · · · · · · · · · · · · ·		1 1			
I.Oʻ				· · · · · · · · · · · · · · · · · · ·	1		·	
1.0	10'-12'	S-3	5%	10-3-3-2	1 1 1		Brown, fine-med. SAND, with coarse gravel to cobble,	18.0
	10-12	3-3	378	10-3-3-2	111.		loose	10.0
					1 1 1		loose	
	<u> </u>				1 1 1	-	ļ	
			ļ		4 170	**		
15'					4			
	15'-17'	S-4	5%	5-9-9-13		1	SAME AS ABOVE	9.3
					1 53	, i		
	1							
20'								
-7	20'-22'	S-5	60%	10-15-19-12			(20'-21') Brown, fine-med. SAND, dry, loose	7.4
					1 3		(21'-22') Brown, fine-coarse SAND & gravel, dry, loos	e
					13.5		1	Ī
						Y		
25'								
	25'-27	S-6	75%	17-24-16-18	1 ■ 1		SAME AS ABOVE, moist, wet at tip (27')	14.2
						£ .		
		· ·	· · · · ·		1 🗏 🖰			
			1			1_		
30'			+			무		
50	30'-32'	S-7	5%	100/2"	▎▤	•	Brown, fine-coarse SAND with gravel, some cobble,	2.8
	30-32	3-7	370	100/2		1	saturated	2.0
		ļ				1	Saturated	-
		ļ	 		│ 	.]		
251	<u> </u>	 	<u> </u>		↓ 			ļ
35'	 	<u> </u>			🗏			
	35'-37'	S-8	0%	19-20-15-18	4 :	1	No Recoverý	
	L		 			4		<u> </u>
					_[Bottom of excavation at 37'	
					_			
40'	1	l	1		1	l .	1	1

Screen - 35'-25'

Sand - 37'-21'

Bentonite Seal - 21'-18'

Sand - 18'-1'

Riser - 25'-2.5' above ground

DRILLING LOG PROJECT: BORING NO. MW-1D PROJECT NO .: A4640 PAGE I OF 2 LOCATION: 2 Woodbine Street DATE STARTED: 3/31/98 Taunton, MA DATE FINISHED: 4/1/98 RESOURCE DRILLING CO.: **COSMO** SURFACE ELEVATION: Unknown CONTROLS DRILLED BY: Frank

Patrick Corcoran

INSPECTED BY:

STABILIZATION TIME

GROUNDWATER OBSERVATIONS

	DEPTH	5	I ARILIZA I	ON LIME	_				3=3/4"	1-1/4"
	21'		N/A	A					HAMMER WT.:	140 lbs.
					_				HAMMER FALL:	30 in.
									100000000000000000000000000000000000000	JU 111.
	CANGUNG		CANADI E	5.7.	T			l emina		CO O TECT
	SAMPLING		SAMPLE		4			STRATA		FIELD TEST
DEPTH	DEPTH		PERCENT	BLOWS PER		WEL		CHANGE	TITHOLOGY	DATA
(FT.)	(FT.)	ID.	RECOV.	6 INCHES		DAT	Α '	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 eV
	FROM - TO	1		1. 10	ļ			i		(ppm)
	0'-2'	SS-1	75%	3-10-10-8	TT	77	7		(0'-1') Brown, fine-med. SAND and gravel, cobbles	1.0
									(1'-2') Light brown fine-med. SAND	<u> </u>
		 	 	·	Ħ			1	(1 2) Eight Grown this mad, by 1135	<u> </u>
		! —			4	ŀΙ	1			}
		ļ			1 '	ΙI	•			
5'		<u> </u>	L		1.	1 1	- 1			
	5'-5.5'	SS-2	25%	17-100/2"	7	1 1			Brown, fine-med. SAND and gravel, cobbles	1.1
					1	1				
		 			1	1 1				
	:				-	1 1			COD ON 11 Decision of China	<u> </u>
					4	1 1			(8') 2" dia. Rocks up auger flights	
10'		<u> </u>			1	1 1				L
	10'-12'	SS-3	60%	5-5-7-7	1	1 1		1	Brown medcoarse SAND, some fine sand and gravel	2.0
					1.	J. I		1		
		 -			1		1,3			
		<u> </u>		· · · · · · · · · · · · · · · · · · ·	1		$\lambda \leq a$			
		ļ	ļ		4		100	•		
15'	ļ				1			l		<u> </u>
	15'-17'	SS-4	50%	9-12-11-9		1 : 1		Ì	SAME AS ABOVE, damp at 17'	3.5
					1		,2	ļ		
		1	<u> </u>		1	H				
	}	1	 		1					
201	<u> </u>	 	ļ		- 1	li	7.7		i	<u> </u>
20'		<u> </u>			4	1 1	1.0		1	
1	20'-22'	SS-5	75%	5-7-7-12	} .	4 3	7		(20'-21') SAME AS ABOVE	9.0
1]	1.5	, 15,	I 	(21'-21.5') Fine-med. SAND and gravel with silt, wet	
1			1		1 .				(21.5'-22') Medcoarse SAND and gravel, wet	<u> </u>
		 	 		1 :		2.5	1	(21.5 22) Most course of the graves, were	
۱ ۵۰۰					4 1		1			
25'		L	ļ				7.5	i		
	25'-27'	SS-6	80%	6-9-13-12	J.,		建一种等于		(25'-26') SAME AS ABOVE	1.8
•					1 *		303		(26'-27') Fine-med. SAND and silt with coarse sand and	d
l					1	H	3		gravel	
1		1	†		1	1 1		1	T T T T T T T T T T	
201	<u> </u>	 	<u> </u>		4			1	1	
30'					4			1 .		
1	30'-32	SS-7	50%	11-15-14-7	1	1 1		l	(30'-31') GRAVEL	3.4
	1		1		1.	1 1		1	(31'-32') Fine SAND and gravel and silt	
					1		100	1		
	· · · · · · ·	 	 		1	j l	إون يه			· · · · · · · · · · · · · · · · · · ·
36		ł	-		-{		ĺ ,			
35'		<u> </u>	<u> </u>		4	1				
· ·	35'-37'	SS-8	90%	39-17-18-20		i i	١.	1	(35'-36') Fine-med. SAND	0.8
	[I			1		l		(36'-37') Coarse SAND and gravel	
		†	†		1		19.	1	i i i i i i i i i i i i i i i i i i i	
[<u> </u>	 	 		-			ı		
			 							
<i>∆</i> ∩′	1	1				-		7	I and the second	1

F:\DOC\4640.00\TECHNICA\DLOGS.XLS

Auger to 25 feet

Then change to casing

GENERAL REMARKS:

Bentonite - 51.5'-50' Screen - 50'-45'

Bentonite - 44'-39'
Native backfill to grade

Sand - 50'-44'

CASING

HSA

3-3/4"

TYPE:

SIZE I.D.:

SAMPLER

Split Spoon 1-1/4"



RESOURCE CONTROLS PROJECT:

PROJECT NO.:

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

DRILLING CO.:

COSMO

DRILLED BY:

Frank

INSPECTED BY:

Patrick Corcoran

BORING NO.

MW-ID

PAGE 2 OF

2

DATE STARTED:

3/31/98

DATE FINISHED:

4/1/98

SURFACE ELEVATION:

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME
21' N/A

TYPE: SIZE I.D.: CASING HSA 3-3/4" SAMPLER Split Spoon 1-1/4"

HAMMER WT.:

HAMMER FALL:

140 lbs. 30 in.

ER FALL:

	SAMPLING		SAMPLE	DATA		STRATA		FIELD TEST
DEPTH	DEPTH		PERCENT	BLOWS PER	WELL	CHANGE	LITHOLOGY	DATA
(FT.)	(FT.)	ID	RECOV.	6 INCHES	DATA	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 eV
` '	FROM - TO							(ppm)
	40'-42'	SS-9	0%	6/100-3"			Fine SAND and cobbles	0.3
				0 (300#)			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
				V (2,00)				
		·····					1	
45'								
73	461 471	66.10	250/	100/5"	ł		Danie Sin CAND annually immed	
	45'-47'	SS-10	25%				Dense fine SAND, some silt, gravel	0.3
	L			14/1" (300#)				
				50/3" (300#)				
50'								
	50'-52'	SS-11	20%	66/6"	1		SAME AS ABOVE	0.2
				100/1"				
				50/2" (300#)		1	Bottom of exploration at 52'	
		†			1	į .		
55'		 			1	l		
	 	1	-		1	***		
		├	-		1	1		
		 			ł		·	
		<u> </u>			Į			
. 60'	<u> </u>				1			
			<u> </u>]			
		l			1		·	
					1			
					1		ŀ	
65'		 		ļ	1	ł		
	†	 	 		1			
					1	į		
		 	<u> </u>		ł		·	
		_	<u> </u>	<u> </u>	1	1	<u>'</u>	
			ļ				1	<u></u>
70'		<u> </u>			1	1	1	
							1	
		14 .			1	1		
	· · · · · · · · · · · · · · · · · · ·	†			1	1		
75'	· · · · · · · · · · · · · · · · · · ·	1			1			
,,,					1		<u> </u>	
	 	 		ļ	1			
						1		
		ļ	 					
80'	1	1	I		I	1	İ	I '

Auger to 25 feet
Then change to casing

Bentonite - 51.5'-50' Screen - 50'-45' Sand - 50'-44' Bentonite - 44'-39' Native backfill to grade

F:\DOC\4640.00\TECHNICA\DLOGS.XLS



RESOURCE CONTROLS PROJECT:

PROJECT NO.:

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

DRILLING CO.:

COSMO

DRILLED BY: INSPECTED BY: Frank/Kenny Mark House

.

JOIN ACE LLE

DATE STARTED: DATE FINISHED:

12/18/97

12/18/97

MW-2

ı

SURFACE ELEVATION:

OF

BORING NO.

PAGE I

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME
10' N/A

TYPE: SIZE I.D.:

٦.

CASING HSA 3-3/4" SAMPLER Split Spoon 1-1/4"

HAMMER WT.:

HAMMER WI.:

140 lbs. 30 in.

	SAMPLING		SAMPLE	DATA]	STRATA		FIELD TEST
DEPTH	DEPTH		PERCENT	BLOWS PER	WELL	CHANGE	LITHOLOGY	DATA
(FT.)	(FT.)	ΙĐ	RECOV.	6 INCHES	DATA	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 eV
	FROM - TO							(ppm)
	0'-2'	S-I	75%	14-15-19-16			Brown sandy LOAM, moist	2.8
		ļ						
		ļ						
		ļ			' '		•	
5'		<u> </u>	750/	1.60.10	ŀЫ		(SI C SI) December Alaska and SII Tomaid and	30
	5'-7'	S-2	75%	1-6-9-12			(5'-6.5') Brown/black organic SILT, moist, soft	3.8
							(6.5'-7') gray fine-med. SAND, loose, moist	-
		<u> </u>			1 🗐			
10'		····			l =			
10	10'-12'	S-3	75%	9-14-14-16	ł 🗐	<u> </u>	Brown/gray fine SAND, saturated, loose	7.2
	10-12	3-3	15%	9-14-14-10	1 🗏		Blown gray line SAND, Saturated, 1005c	7.2

			 		1 🗮	1		
15'	 		 				•	
1,5	15'-17'	S-4	50%	7-19-20-22		l	Brown, fine-coarse SAND, with silt, trace fine gravel,	12.2
		 				ŀ	med. dense	
						1	Bottom of excavation at 17'	
			 		1			
20'			1		1			
	1				1		Screen - 15'-5'	
					1		Sand - 15'-3'	
							Bentonite Seal - 3'-1'	,,,,,,,,,,
					1		Riser - 5'-2.5' above ground	
25'					1			
							,	
					_			<u> </u>
			<u> </u>		1		ļ	1
30'					1			
							·	
		<u></u>			_			
		<u> </u>			1			
		<u> </u>	<u> </u>					
35'					1			
					_			
			<u> </u>		1			
					1		1	
			<u> </u>		_			
40'	. REMARKS:				L			

DRILLING LOG PROJECT: BORING NO. MW-2D PROJECT NO .: A4640 PAGE I LOCATION: 2 Woodbine Street DATE STARTED: 4/2/98 Taunton, MA DATE FINISHED: 4/2/98 RESOURCE DRILLING CO.: COSMO SURFACE ELEVATION: Unknown CONTROLS DRILLED BY: Frank INSPECTED BY: Patrick Corcoran **GROUNDWATER OBSERVATIONS CASING** SAMPLER TYPE: **HSA** Split Spoon STABILIZATION TIME SIZE I.D.: 3-3/4" 1-1/4" N/A HAMMER WT.: 140 lbs. HAMMER FALL: 30 in. SAMPLING SAMPLE DATA STRATA FIELD TEST DEPTH DEPTH PERCENT BLOWS PER WELL CHANGE LITHOLOGY DATA (FT.) (FT.) ID RECOV. 6 INCHES DATA (FT.) (DESCRIPTION OF MATERIALS) PID - 10.2 eV FROM - TO (ppm) 0'-2' 40% 2-7-20-9 SS-1 (0'-0.5') Dark brown SAND, organic 3.4 (0.5'-1') Cobbles, brick, asphalt, fine med. sand and gravel 5' 5'-7' SS-2 50% 1-2-3-8 (5'-5.5') Brown fine-med. SAND with silt, brick, grave 4.3 (5.5'-7.5') PEAT (7.5'-8') Gray fine-med. SAND 10' 10'-12' SS-3 60% 7-15-15-19 Light brown fine-med. SAND, some silt 10.6 15' 15'-17' SS-4 60% 7-16-14-12 Med. SAND and gravel, silt 8.3 20' 20'-22' SS-5 40% 3-4-7-8 3.2 Med.-coarse SAND and gravel, some cobbles and silt 25' 25'-27' 4/100-2" (25.7') Refusal 3.4 50/0" (300#) Bottom of exploration at 27' 30, 35 GENERAL REMARKS: Screen - 25'-20' Sand - 19' Bentonite - 16'

F:\DOC\4640.00\TECHNICA\DLOGS.XLS

Native backfill to grade

DRILLING LOG BORING NO. MW-3 PROJECT: PROJECT NO .: A4640 PAGÉ I OF LOCATION: 2 Woodbine Street DATE STARTED: 12/18/97 Taunton, MA DATE FINISHED: 12/18/97 RESOURCE DRILLING CO .: **COSMO** SURFACE ELEVATION: Unknown CONTROLS DRILLED BY: Frank/Kenny INSPECTED BY: Mark House **CASING** SAMPLER **GROUNDWATER OBSERVATIONS** TYPE: HSA Split Spoon SIZE I.D.: 3-3/4" 1-1/4" DEPTH STABILIZATION TIME HAMMER WT.: 140 lbs. N/A HAMMER FALL: 30 in. STRATA FIELD TEST SAMPLING SAMPLE DATA LITHOLOGY DEPTH DEPTH PERCENT **BLOWS PER** WELL CHANGE DATA RECOV. 6 INCHES DATA (FT.) (DESCRIPTION OF MATERIALS) PID - 10.2 eV (FT.) ID (FT.) FROM - TO (ppm) 70% 12-5-4-6 Brown organic sandy SILT, soft 1.9 0'-2' S-1 5'-7' S-2 55% 9-14-16-16 Gray, fine-coarse SAND, trace silt and fine gravel, sat 2.3 loose 10' 10'-12' S-3 60% 13-19-21-22 Light brown, fine-coarse SAND and silt, some coarse 10.6 and cobble, saturated Bottom of excavation at 13' 15' 20 Screen - 13'-3' Sand - 13'-2' Bentonite Seal - 2'-1' Riser - 3'-2.5' above ground 25' 30, 35 GENERAL REMARKS:

DRILLING LOG PROJECT: BORING NO. MW-4 PROJECT NO.: A4640 PAGE I OF LOCATION: 2 Woodbine Street DATE STARTED: 12/18/97 Taunton, MA DATE FINISHED: 12/18/97 RESOURCE DRÏLLING CO.: COSMO SURFACE ELEVATION: Unknown CONTROLS DRILLED BY: Frank/Kenny INSPECTED BY: Mark House **CASING** SAMPLER **GROUNDWATER OBSERVATIONS** TYPE: **HSA** Split Spoon 3-3/4" STABILIZATION TIME SIZE I.D.: 1-1/4" HAMMER WT.: 140 lbs. HAMMER FALL: 30 in. SAMPLING SAMPLE DATA STRATA FIELD TEST DEPTH DEPTH PERCENT **BLOWS PER** WELL CHANGE LITHOLOGY DATA RECOV. PID - 10.2 eV (FT.) (FT.) 6 INCHES DATA (FT.) (DESCRIPTION OF MATERIALS) FROM - TO (ppm) 0'-2' 65% 14-6-5-7 Brown silty SAND, moist, loose 0.0 5' 5'-7' S-2 40% 9-7-13-15 Gray, fine-coarse SAND, trace silt, saturated, loose 0.9 10, 10'-12' S-3 50% 10-12-11-8 Gray/brown, fine-coarse SAND, trace silt, loose, satur 95.0 Bottom of excavation at 13' 15' 20 Screen - 13'-3' Sand - 13'-2' Bentonite Seal - 2'-1' Riser - 3'-2.5' above ground 25' 30' 35' GENERAL REMARKS: F:\DOC\4640.00\TECHNICA\DLOGS.XLS



RESOURCE CONTROLS PROJECT:

PROJECT NO.:

A4640

LOCATION:

2 Woodbine Street

Patrick Corcoran

Taunton, MA

١..

DRILLING CO.:

COSMO

DRILLED BY: INSPECTED BY:

Frank

BORING NO.

PAGE I OF

DATE STARTED:

4/1/98

MW-4D

DATE FINISHED:

4/2/98

SURFACE ELEVATION:

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME N/A

TYPE: SIZE I.D.:

HSA 3-3/4"

CASING

SAMPLER Split Spoon 1-1/4"

5-5

140 lbs.

HAMMER WT.: HAMMER FALL:

30 in.

	SAMPLING		SAMPLE	DATA			STRATA		FIELD TEST
DEPTH	DEPTH		PERCENT	BLOWS PER	WE	Щ	CHANGE	LITHOLOGY	DATA
(FT.)	(FT.)	ID	RECOV.	6 INCHES	DA	TΑ	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 e
	FROM - TO					_			(ppm)
	0'-2'	SS-1	50%	3-9-7-2		1/		Brown fine SAND and gravel	3.3
						H			
					│ ' 	ľ			
-5'							-		
	5'-7'	SS-2	75%	6-9-8-5			-	Gray fine-med. SAND and silt	9.1
		ļ							
		ļ							
, ~		ļ	 				1		
10'	10'-12'	66.2	900/	3-6-16-20				(101.11) 0	70.0
	10-12	SS-3	80%	3-0-10-20		1		(10'-11') Organic fine-med. SAND	10.8
		<u> </u>	 			٠.		(11'-12') Med. SAND and silt	
		 		4 1				·	
15'			l			١.			
10 .	15'-17'	SS-4	0%	7-27-20-57	ŀ	1.	,	Lost basket-NO SAMPLE	17.3
	15'-17'	SS-4A	20%	15-19-23-37				Drive & Wash - Dense fine-med. SAND, with gravel,	17.3
	13-1/	33-4A	.20%	13-19-23-3,/				silt and cobbles	
		 				t	ļ	isht and cooles	
20		 							
20	20'-22'	SS-5	20%	53-12-23-20				Brown fine-med. SAND and grave, silt, some cobbles	16.8
		30-3	2070	JJ-12-25-20				blown fine-field. SAND and grave, sitt, some cooles	10.0
					.	**		•	
			·					·	
25'			·						
	25'-27'	SS-6	40%	24-23-21-77		₫		Light brown/orange dense fine-med. SAND and silt	10.2
			10,70.	2, 20 21,		30			
						1			
			i			1 .			
30'						•			
	30'-32'	-	0%	100/4"		-		Weathered rock	8.9
			1 2/3	70/1" (300#)					0.7
		t		70,7 (500.1)			1	Bottom of exploration at 32'	
		<u> </u>	<u> </u>						ļ. >
35 ¹	· · · · · · · · · · · · · · · · · · ·			-	-		1		
-					1				· · · · · · · · · · · · · · · · · · ·
		<u> </u>							
	· · · · · -								
40'	 				Ī				
	REMARKS.		<u></u>	<u> </u>	L		<u> </u>		

Sand - 24'
Bentonite - 20'
Native backfill to grade



RESOURCE CONTROLS

PROJECT:

PROJECT NO.;

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

DRILLING CO.:

COSMO

DRILLED BY:

Ken, Frank

INSPECTED BY:

Mark House

BORING NO.

MW-5

PAGE I OF

DATE STARTED:

4/3/98

DATE FINISHED:

4/3/98

SURFACE ELEVATION:

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME 19.8'

TYPE:

CASING **HSA**

SAMPLER Split Spoon

SIZE I.D.:

3-3/4"

1-1/4"

HAMMER WT.:

140 lbs.

HAMMER FALL:

30 in.

	SAMPLING		SAMPLE I			STRATA		FIELD TEST
DEPTH (FT.)	DEPTH (FT.)	ID.	PERCENT RECOV.	BLOWS PER 6 INCHES	WELL DATA	CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	DATA PID - 10.2 e
	FROM - TO							(ppm)
	0'-2'	S-1	65%	1-5-13-22			Brown fine-coarse SAND, trace silt and coarse gravel,	0.2
]		moist, med. Dense	
	······································] ' ['		·	
5']			
	5'-7'	S-2	25%	3-2-6-10	1 1 1		Brown fine-coarse SAND, trace silt, moist, loose	0.0
					111			
]			
					1 1 1			
1.0'					1 1 1			
	10'-12'	S-3	25%	7-7-3-3	1 1		Brown medcoarse SAND, trace fines, moist, loose	0.2
	-					1		
15'					1 Ш.		· .	
	15'-17'	S-4	5%	50/5"			(15'-15.7') Gray/brown medcoarse SAND, with cobbl	1.8
				50/3" (300#)			(fratured), moist, very dense	
							(
20			†			<u>~</u>		
	20'-22'	S-5	65%	30-18-24-20		=	Gray/brown fine-coarse SAND, trace silt, gravel and	0.6
							cobble (fractured), wet, dense	
			†				,	
	· ···							
25'								
	25'-27'	S-6	50%	16-13-19-21			SAME AS ABOVE, wet	0.2
			30,0	10 13 17 21	100		orivid ris rise ver, wo	0.2
			† 		· · · · · ·	1	Bottom of exploration at 27'	
					1		Doubli of exploration at 27	<u> </u>
30!	· · · · · · · · · · · · · · · · · · ·		 	· · · · · · · · · · · · · · · · · · ·				
.50,		-			{			
			 		ł		•	
			 					
			 	···············				
35'			 				,	
دد					1			
		-	 					
								
			 		ĺ			<u>.</u>
40'			<u> </u>					· ·

Screen - 25'-15' Sand - 27'-13' Bentonite - 13'-11' Native backfill to grade



RESOURCE CONTROLS

PROJECT:

PROJECT NO .:

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

DRILLING CO.:

COSMO

DRILLED BY:

Ken, Frank Mark House

INSPECTED BY:

BORING NO.

MW-6

1

PAGE 1 OF

DATE STÄRTED:

4/3/98

DATE FINISHED:

4/3/98

SURFACE ELEVATION:

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME N/A

TYPE:

CASING HSA

SAMPLER Split Spoon 1-1/4"

SIZE I.D.: HAMMER WT.: 3-3/4"

140 lbs.

HAMMER FALL:

30 in.

	SAMPLING		Sample		1	STRATA]	FIELD TEST
DEPTH	DEPTH		PERCENT		WELL	CHANGE		DATA
(FT.)	(FT.)	ID	RECOV.	6 INCHES	DATA	(FT.)	(DESCRIPTION OF MATERIALS)	PID - 10.2 e
	FROM - TO							(ppm)
	0'-2'	S-1	70%	2-8-10-5			Brown fine-coarse SAND, trace fines & organics, loos	1.0
j						<u>~</u>	moist	
	2'-4'	S-2	50%	2-3-5-5		_	Brown to black fine-med. SAND, with organics (coal),	2.8
							loose, wet	
5'								
_	5'-7'	S-3	60%	2-6-11-11	1 🗏		Brown fine-med. SAND, trace fines, loose, wet	0.8
	3-,	<u>5,5</u>	0070	,2-0-11-11,			blown line-nied. SAND, date lines, loose, wet	0.8
	7'-9'	S-4	60%	6-9-13-12			SAME AS ABOVE	
	1-9	3:4	00%	0-9-13-12			SAME AS ABOVE	0.8
				<u> </u>			+	
10'								_
	10'-12'	S-5	40%	3-5-5-5]		Gray/brown medcoarse SAND, trace fines & fine gra	2.8
					1.00	·	loose, wet	
			l				Bottom of exploration at 12'	
					1		·	
15'					1			
					1			
					1			
					1			
			·····		4			
						r		
20'						l	I .	
]	ľ		
							,	
				-]			
					1			
25'					1			
					1		ű.	
					1			
					-	İ		
					-	l		
30,			l			1		
						1		
						Į		
						1		
					1	1		
35'					i .			
	#. 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10				1			
					1	1		
					ł			
40'					1			

Screen - 10'-2' Sand - 12'-1' Bentonite - 1'-0.5' Native backfill to grade



RESOURCE CONTROLS

PROJECT:

PROJECT NO.:

A4640

LOCATION:

2 Woodbine Street

Taunton, MA

DRILLING CO.:

COSMO

DRILLED BY:

Frank

INSPECTED BY:

Patrick Corcoran

BORING NO.

MW-7

PAGE I OF

DATE STARTED:

4/2/98

DATE FINISHED:

4/2/98

SURFACE ELEVATION:

Unknown

GROUNDWATER OBSERVATIONS

DEPTH STABILIZATION TIME N/A

TYPE:

CASING HSA

SAMPLER Split Spoon

SIZE I.D.:

3-3/4"

1-1/4" 140 lbs.

HAMMER WT.:

HAMMER FALL:

30 in.

	SAMPLING		SAMPLE	DATA	Į.	STRATA		FIELD TES
EPTH (FT.)	DEPTH (FT.) FROM - TO	ID	PERCENT RECOV.	BLOWS PER 6 INCHES	WELL DATA	CHANGE (FT.)	LITHOLOGY (DESCRIPTION OF MATERIALS)	DATA PID - 10.2 ((ppm)
	0'-2'	SS-1	5%	4-14-10-7		÷	Brown fine-med. SAND and gravel, trace cobbles,	1.3
						1	wet < 5' (off flights)	
								··· ··· · · · · · · · · · · · · · · ·
5 ⁱ						🗸		
	5'-7'	SS-2	40%	5-9-18-24		=	Wet fine SAND and silt, trace gray gravel	1.8
								
			i					
0' .	· · · · · · · · · · · · · · · · · · ·						'	
<u>v.</u>	10'-12'	SS-3	60%	8-11-13-16			Fine-med. SAND and silt, gray gravel	1.7
		30 3	0070	0 11-15 10			and sit, gray graver	1
						1	Bottom of exploration at 12'	
					1		Dottom of exploration at 12	-
5'	· · · · · · · · · · · · · · · · · · ·		 		1			
J					1	**		
					ł			
					ł			
					1			
^1								
O,				· · · · · · · · · · · · · · · · · · ·	Į.			
							,	ļ
						l		
					· ·		·	
5'	,]	1	,	
]			
					ľ		·	
				,	1		•	
						l		
ý			[1	[
		¥			1	İ		
					1			
					1		•	<u> </u>
					j	1		———
5'								
<u>-</u>		-	 		1			
		 	 		ł		·	
	ļ	ļ ———			ł			
		 	i		ł			
~ !		ļ			1			
Oʻ	REMARKS:	L			L	l		l

F:\DOC\4640.00\TECHNICA\DLOGS.XLS

Sand - 12'-1' Bentonite - 1'-0.5' Native backfill to grade

APPENDIX C

Laboratory Certificates of Soil Analysis

Division of Thielsch Engineering, Inc.

PECD DEC 3 1 1997

December 26, 1997

Mr. Pat Corcoran Resource Controls 474 Broadway Street Pawtucket, RI 02860

Dear Mr. Corcoran:

We appreciate this opportunity to provide you with our analytical services. ESS Laboratory is committed to providing the highest quality service. Our dedication to each client includes responsiveness to emergencies, dependable, well-written reports, and client services which include the availability of all analysts to answer your inquiries.

Enclosed is your data report. The corresponding project invoice is being forwarded to your Accounts Payable Department. Samples will be disposed of thirty days after the final report is mailed. If you have any questions or concerns, please feel free to call our Customer Service Department. We value our continued relationship and look forward to hearing from you in the future.

Sincerely,

ESS LABORATORY

Laurel Stoddard Laboratory Manager

Enclosure

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

CLIENT: Resource Controls

CLIENT PROJECT ID: Taunton

ESS PROJECT ID: 973925

Sample Receipt

One solid sample was received on December 9, 1997 for the analyses specified on the enclosed Chain of Custody Record.

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. These analyses with these noted observations are in conformance to the Quality Assurance Plan.

No unusual observations noted.

This signed Certificate of Analysis is our approved release of your analytical results. Beginning with this Project Narrative, the entire report has been paginated. The Chain of Custody is the final report page. This report should not be copied except in full without the approval of the laboratory.

End of project narrative.

Laurel Stoddard/Eric Baanante

Laboratory Manager/Operations Manager

— /⇔↓ Date

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260

Client: Resource Controls Client Project ID: Taunton Client Sample ID: TP-6 Date Sampled: 12/18/97 Date Analyzed: 12/24/1997

ESS Project ID: 973925 ESS Sample ID: 973925-01

Dilution Factor: 1
Units: ug/Kg dry wt.

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	18	Chlorobenzene	ND	9
Chloromethane	ND	18	1,1,1,2-Tetrachloroethane	ND ·	9
Vinyl Chloride	ND	18	Ethyl Benzene	25	9
Bromomethane	ND	18	Xylenes (Total)	22	9
Chloroethane	ND	18	Styrene	ND	9
Trichlorofluoromethane	ND	9	Bromoform	ND	9
1,1-Dichloroethene	ND	. 9	Isopropyibenzene	11	9
Methylene Chloride	13	. 9	1,2,3-Trichloropropane	ND	9
Methyl tert-Butyl Ether	ND	9	Bromobenzene	ND	18
Trans-1,2-Dichloroethene	ND	9	1,1,2,2-Tetrachloroethane	ND :	9
1,1-Dichloroethane	ND	9	n-Propylbenzene	34	9
Cis-1,2-Dichloroethene	ND	9	2-Chlorotoluene	20	9
2,2-Dichloropropane	ND	18	4-Chiorotoluene	ND -	9
Bromochloromethane	ND	18	1,3,5-Trimethylbenzene	99	9
Chloroform	ND	9.	tert-Butylbenzene	38	9
1,1,1-Trichloroethane	ND	9	1,2,4-Trimethylbenzene	281	9
1,1-Dichloropropene	ND	18	sec-Butylbenzene	ND	9
Carbon Tetrachloride	ND	9	1,3-Dichlorobenzene	ND	9
Benzene	ND	9	4-Isopropyltoluene	ND	9
1,2-Dichloroethane	ND	9	1,4-Dichlorobenzene	ND	9
Trichloroethene	ND	9	n-Butylbenzene	31	9
1,2-Dichloropropane	ND	. 9	1,2-Dichlorobenzene	ND	9
Dibromoethane	ND	18	1,2-Dibromo-3-chloropropane	ND	9
Bromodichloromethane	ND	9	1,2,4-Trichlorobenzene	ND	9
Cis-1,3-Dichloropropene	ND	9	Hexachlorobutadiene	ND	9
Toluene	ND	9	Naphthalene	40	9
Trans-1,3-Dichloropropene	ND	9	1,2,3-Trichlorobenzene	ND	9
1,1,2-Trichloroethane	ND	9	Acetone	ND	180
1,3-Dichloropropane	ND	9	2-Butanone	ND	180
Tetrachloroethene	ND	9	4-Methyl-2-pentanone	ND	90
Dibromochloromethane	ND	9	2-Hexanone	ND	90
1,2-Dibromoethane	ND	9	Carbon Disulfide	ND .	9

ND= Not Detected above	Method	Reporting	Limit	(MRL)
------------------------	--------	-----------	-------	-------

Approved by: UAS

Date: 12/26/97

PERCENT SOLIDS SECTION

Division of Thielsch Engineering, Inc.

CED	TTT	オペ イ	TT. C	NT 4	NT 1	TYCTC
CER	AII	$I \cup A$	$LE \cup$	r_{A}	NA	LYSIS

PERCENT SOLIDS

Client: Resource Controls

Client Project ID: Taunton

ESS Project ID: 973925

Date Sampled: 12/18/97

Date Reported: 12/26/97

ESS Laboratory Sample ID	Client Sample ID	Result (%)
973925-01	TP-6	84

Approved by:

Date:

QUALITY CONTROL SECTION

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS SOIL SURROGATE RECOVERY

Client: Resource Controls

Client Project ID: Taunton

ESS Project ID: 973925

Sample ID	DCE#	TOL#	BFB#
VMA122497B1	103	100	100
973925-01	106	109	107

Column to be used to flag recovery values with an asterisk when outside the quality control range.

DCE = DICHLOROETHANE-D4 (70-121%)

TOL = *TOLUENE-D8* (81-117%)

BFB = BROMOFLUOROBENZENE (74-121%)

Approved by: _____

Date: 12/29/97

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260

Client: Resource Controls
Client Project ID: Taunton

Client Sample ID: Method Blank

Date Sampled: N/A

Date Analyzed: 12/24/1997

ESS Project ID: 973925

ESS Sample ID: MA122497B1

Dilution Factor: 1 Units: ug/Kg dry wt.

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	10, 11, 11	Chlorobenzene	ND	5
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND 📲	5
Vinyl Chloride	ND	10	Ethyl Benzene	ND	 5 .
Bromomethane	ND	10	Xylenes (Total)	ND	5
Chloroethane	ND	10	Styrene	ND	5
Trichlorofluoromethane	ND	5	Bromoform	ND	5
1,1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachioroethane	ND	5
1,1-Dichloroethane	ND	5	n-Propylbenzene	ND	5
Cis-1,2-Dichloroethene	ND	5	2-Chlorotoluene	ND	. 5
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	5
Chloroform	ND	.5	tert-Butylbenzene	ND	5
1,1,1-Trichloroethane	ND	5	1,2,4-Trimethylbenzene	ND	5
1,1-Dichloropropene	NĎ	10	sec-Butylbenzene	ND	- 5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Benzene	ND	5	4-Isopropyltoluene	ND	5
1,2-Dichloroethane	ND	5	1,4-Dichlorobenzene	ND	5
Trichloroethene	ND	5	n-Butylbenzene	ND	5
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	ND	5
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	5
Bromodichloromethane	ND	.5.	1,2,4-Trichlorobenzene	ND	5
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	5
Toluëne	ND	5	Naphthalene	ND	5
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	ND	5
1,1,2-Trichloroethane	ND	5	Acetone	ND	100
1,3-Dichloropropane	ND	5	2-Butanone	ND	100
Tetrachloroethene	ND	5	4-Methyl-2-pentanone	ND	50
Dibromochloromethane	ND	.5	2-Hexanone	ND	50
1,2-Dibromoethane	ND	5	Carbon Disulfide	ND	5

N/A = Not Applica	D	E
-------------------	---	---

ND= Not I	Detected	above	Method F	<i>leporting</i>	: Limit (MRL)

Approved by: LAS

Date: 12/26/97

ESS LABORATORY CERTIFICATIONS

Rhode Island: RI002

Connecticut: PH-0750

Maine: RI002

Massachusetts: RI002

New Hampshire:

Drinking Water: 242496-F

Wastewater: 242496-E

New Jersey: 78002

New York: 11313

Environmental Analysis/Water: 033976

Solid and Hazardous Waste: 033977

CHAIN OF CUSTODY

Page	of	

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211

Tel. (401) 461-7181 Fax (40	01) 461-4486	Turn Time Standard (2 Weeks)	Other_5	day Ess	LAB PROJECTIO
Co. Name RCA	Project # Project Name	Tavnton		Analysis 1	Required
Contact Person Pat Corcoran	Address 444 BWA	1			
City Partvollet State	RI Zip 82868	Tel. 7-8-6860 50 15 15 15 15 15 15 15 15 15 15 15 15 15	Container 62/2	1111	
Purchase Order #	Fax#	727-1849	Type of Container		
ESS LAB Sample # Date Collection Time	Sampl	e Identification	ary V		
12-18-97 1200	XSTP-6		1		
·					
Container Type: P-Poly G-Glass	S-Sterile V-VOA	Matrix: DW-Drinking Wat	er S-Solid	GW-Ground Wa	ater WW-Wastewater
	nments:				
Cooler Temp:	1	Date/Time Relinquished by: (Signa	tura) IDati	e/Time Received by: (S	Signature) Date/Time
Relinquished by: (Signature) Date Tim	Received by: (Signature)	Date/Time Relinquished by: (Signa	Date Date	I Received by: (5	Date/ Inite
Reliequished by: (Signature) Date/Jim	Received by: (Signature)	Date/Time Relinquished by: (Signa	ture) Date	c/Time Received by: (S	Signature) Date/Time

Division of Thielsch Engineering, Inc.

RECO APR 1 7 1998

April 9, 1998

Mr. Pat Corcoran Resource Controls 474 Broadway Street Pawtucket, RI 02860

Dear Mr. Corcoran:

We appreciate this opportunity to provide you with our analytical services. ESS Laboratory is committed to providing the highest quality service. Our dedication to each client includes responsiveness to emergencies, dependable, well-written reports, and client services which include the availability of all analysts to answer your inquiries.

Enclosed is your data report. The corresponding project invoice is being forwarded to your Accounts Payable Department. Samples will be disposed of thirty days after the final report is mailed. If you have any questions or concerns, please feel free to call our Customer Service Department. We value our continued relationship and look forward to hearing from you in the future.

Sincerely,

ESS LABORATORY

Laurel Stoddard

Laboratory Manager

Enclosure

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls

Client Project ID: Woodbine

Client Sample ID: MW-1D

Date Sampled: 4/1/98 Date Analyzed: 4/3/1998 ESS Project ID: 980875 ESS Sample ID: 980875-01

Dilution Factor: 1

Units: µg/Kg

Parameter	Kesult	MKL
Dichlorofluoromethane	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	10
1,1-Dichloroethene	ND	10
Methylene Chloride	. ND	10
trans-1,2-Dichloroethene	ND	10
1,1-Dichloroethane	ND	··· 10
cis-1,2-Dichloroethene	ND	10
Chloroform	ND	10
1,1,1-Trichloroethane	ND	10
Carbon Tetrachloride	ND	. 10
1,2-Dichloroethane	ND	10
Trichloroethene	ND	10
1,2-Dichloropropane	ND	10
Bromodichloromethane	ŊD	10
2-Chloroethylvinyl ether	ND	101
Cis-1,3-Dichloropropene	ND	10
Trans-1,3-Dichloropropene	ND	10
1,1,2-Trichloroethane	ND	10
Tetrachloroethene	ND	10
Dibromochloromethane	ND	10
Chlorobenzene	ND	10
Bromoform	ND	10
1,1,2,2-Tetrachloroethane	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
1,2-Dichlorobenzene	ND	10

ND = Not	Detected:	above Metho	d Reporting	Limit	(MRL)

Approved by:		Date:	4/19	1/28	
- F			7		

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1

METHOD FOR RANGES: MADEL ETH 98-1 METHOD FOR TARGET ANALYTES: 8270

Client: Resource Controls
Client Project ID: Woodbine
Client Sample ID: MW-1D

Date Sampled: 4/1/98 Date Received: 4/3/1998 Date Extracted: 4/6/1998 ESS Project ID: 980875 ESS Sample ID: 980875-01 Date Analyzed: 4/13/1998

F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Soil

Container: Satisfactory
Aqueous Preservative: None

Temperature: See Chain Extraction Method: 3545 % Moisture (Soil): 15

EPH ANALYTICAL RESULTS

EPH Surrogate Star	idard ID 🗀 🗀 🗀			EPH Bractionation	Surrogate ID		
WHY122497B				WHY022798A			
	Target Analytes				Range Analyte	s i i i i i i i	
Critis:	ug/kg (dry wt.)	RESULT	FMRL	Units:	mg/kg (dry wt.)	RIESULA	- WRISE
	Naphthalene	ND	392	FI: C ₉ -C ₁₈ Aliphai	ic Hydrocarbons	ND	29
Diesel PAH.	2-Methylnaphthalene	ND	392	F1: C ₁₉ -C ₃₆ Alipha	tic Hydrocarbons	ND	29
Analytes =	Phenanthrene	ND	392	F2: C ₁₁ -C ₂₂ Aroma	tic Hydrocarbons 🕮	ND	29
	Acenaphthylene	ND	392	F24 Unadjusted On	-C2 Aromatics	ND	29
	Acenaphthene	ND	392	Sample Su	rrogate Acceptance	Range: 40-14	10% 1
	Anthracene	ND	392	Aliphatic Surrogat	e% Recovery	7	8
and American	Benzo a anthracene 🛊 :	ND	392	Aromatic Surroga	e % Recovery	9	7
	Benzo a pyrene	ND	392	- Fractionation	Surrogate Acceptan	ice Range: 60	140%
Other PAR	Benzo billionanthene	ND	392	#1 Fractionation S	urrogate% Recovery	N/	/A
Target :	Benzo Chioranthene	ND	392	#2 Fractionation S	urrogate % Recovery	N/	/A
Analytes	Chyriene : Ferri	ND	392				
	Dibenzo a h anthracene	ND	392	and the second s	inge data exclude con	The state of the s	
	Fluoranthene	ND	392	surrogate(s) and/e	or internal/standards e	luting in that i	ange.
	Fluorene Mars III	ND	392				i di k
	Indeno(1,243,cd)pyrene	ND	392	C ₁₁ -C ₂₂ Aromat	ic Hydrocarbons exch	ide the 📲 📳	
	Payrene standard	ND	392	concentrations	of PAHL/Target-Analy	tes.:: : :	
	Benzolgia pervienci	ND	392				an e

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: _______//_

....

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls

Client Project ID: Woodbine

Client Sample ID: MW-2D

Date Sampled: 4/2/98 Date Analyzed: 4/3/1998 ESS Project ID: 980875

ESS Sample ID: 980875-02

Dilution Factor: 1 Units: μg/Kg

Parameter	Result	MRL
Dichlorofluoromethane	ND	7
Chloromethane	ND	7
Vinyl Chloride	ND	7
Bromomethane	ND	
Chloroethane	ND	7
Trichlorofluoromethane	ND	. 7
1,1-Dichloroethene	ND	7
Methylene Chloride	ND	7
trans-1,2-Dichloroethene	ND	7
1,1-Dichloroethane	ND	<u> </u>
cis-1,2-Dichloroethene	ND	7
Chloroform	ND	en entre.
1,1,1-Trichloroethane	ND	tomeris.
Carbon Tetrachloride	ND	To the second se
1,2-Dichloroethane	ND	7
Trichloroethene	ND	7
1,2-Dichloropropane	ND	7
Bromodichloromethane	ND	7
2-Chloroethylvinyl ether	ND	70
Cis-1,3-Dichloropropene	ND	7
Trans-1,3-Dichloropropene	ND	7
1,1,2-Trichloroethane	ND	7_
Tetrachloroethene	ND	7
Dibromochloromethane	ND	7
Chlorobenzene	11	7
Bromoform	ND	7
1,1,2,2-Tetrachloroethane	ND	7
1,3-Dichlorobenzene	ND	7
1,4-Dichlorobenzene	ND	7
1,2-Dichlorobenzene	ND	

ND = Not Detected above Method Reporting Limit (MRL)

Approved by:

Date

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS **METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270**

Client: Resource Controls Client Project ID: Woodbine Client Sample ID: MW-2D

Date Sampled: 4/2/98 Date Received: 4/3/1998 Date Extracted: 4/6/1998 ESS Project ID: 980875 ESS Sample ID: 980875-02 Date Analyzed: 4/13/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Soil

Container: Satisfactory Aqueous Preservative: None

Temperature: See Chain Extraction Method: 3545 % Moisture (Soil): 15

EPH ANALYTICAL RESULTS

EPH Surrogate Star	dard ID			EPI- Practionatio	ni Surrogate ID 📧 💮		1.75
WHY122497B		-		WHY022798A			
Target Analytes					Range Analyte	s.	
West of the Dimise	ug/kg (dry wt.)	RESULT	MRL.	Units:	mg/kg (dry wt.)	RESULT	MRE
	Naphthalene	ND	392	F1=C#C ₁₈ Aliph	atic Hydrocarbons 🐥	- ND	29
Diësel PAH 🚑	2=Methylnaphthalene	ND	392	F1: C ₁₅ -C ₁₆ Aliph	iatic Hydrocarbons	ND	29
Analytes	Phenanthrene	ND	392	F2: Cij-C ₂₂ Aron	ratically drocarbons:	. ND	29
	Acenaphthylene: ********	ND	392	F2: Unadjusted (II-C22 Aromatics	. ND	29
	Acenaphthene	ND	392	- Sample S	urrogate Acceptance	Range: 40-1	40%
	Anthracene.	ND	392	Alimbatic Surrog	ate % Recovery:	. 7	7
	Benzo a anthracene	ND	392	Aromatic Surrog	ate: % Recovery : * : : :	9	7
	Benzo a pyrene :::::::::::::::::::::::::::::::::::	ND	392	Eractionatio	n Surcogate Acceptai	ice Range: 6	05140%
Other PAH	Beigo b (luorantilenes)	ND	392	#1 Fractionation	Surrogate % Recovery	N	/A
Target 🐇 🖟	Benzolk fluoranthene.	ND	392	#2 Fractionation	Surrogate % Recovery	§ N	/A
:: Analytes	Chyrsene - Sales	ND	392				
	Diterzo za animacere	ND	392		Range data exclude con		
	Fluoranthene	ND	392	surrogate(s) and	/or internal standards e	lumg in that	range
	Fluorene	ND	392				
	Indeno(1,2,3-cd)pyrene	ND	392	Ci-Ca Aroma	uc#ydrocarbous excf	ude the 😅 🖘	
	Pyrene Rate Company	ND	392	concentrations	of PAH Target Analy	tes.	
	Benzo g hi ipetylene li	ND	392			# 1 T 14	Glaight a sea

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls

Client Project ID: Woodbine

Client Sample ID: MW-4D

Date Sampled: 4/2/98 Date Analyzed: 4/3/1998 ESS Project ID: 980875

ESS Sample ID: 980875-03

Dilution Factor: 1 Units: µg/Kg

Parameter	Kesult		MKL
Dichlorofluoromethane	ND		9
Chloromethane	ND	, ·	9
Vinyl Chloride	ND		9
Bromomethane	ND	•	9
Chloroethane	ND		9
Trichlorofluoromethane	ND		9
1,1-Dichloroethene	ND		9
Methylene Chloride	ND		9
trans-1,2-Dichloroethene	ND	eg tree in .	9
1,1-Dichloroethane	ND	and the same	9
cis-1,2-Dichloroethene	ND		9
Chloroform	ND		9
1,1,1-Trichloroethane	ND	e de la companya del companya de la companya del companya de la co	9 9
Carbon Tetrachloride	ND	and the second s	9
1,2-Dichloroethane	ND	g or street	9
Trichloroethene	ND		9
1,2-Dichloropropane	ND	And the second s	
Bromodichloromethane	ND		9
2-Chloroethylvinyl ether	ND		87
Cis-1,3-Dichloropropene	ND		9
Trans-1,3-Dichloropropene	ND w		9
1,1,2-Trichloroethane	ND		9
Tetrachloroethene	ND		9
Dibromochloromethane	ND		9
Chlorobenzene	ND	•	. 9
Bromoform	ND		9
1,1,2,2-Tetrachloroethane	ND		9
1,3-Dichlorobenzene	ND		9
1,4-Dichlorobenzene	ND		9
1,2-Dichlorobenzene	ND		9

ND = Not Detected above Method Reporting Limit (MRL)

Approved by:

Date:

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS **METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270**

Client: Resource Controls Client Project ID: Woodbine Client Sample ID: MW-4D Date Sampled: 4/2/98 Date Received: 4/3/1998 Date Extracted: 4/6/1998

ESS Project ID: 980875 ESS Sample ID: 980875-03 Date Analyzed: 4/13/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Soil

Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3545 % Moisture (Soil): 13

EPH ANALYTICAL RESULTS

PH Surrogate Star	ndard ID		STATE OF	EPH Fractionation Surrogate ID							
HY122497B				WHY022798A							
	Target Analytes		EMEC 40	Range Analytes							
- Units:	ug/kg (dry wt.)	RESULT	MRL	Units: mg/kg (dry wt.)	RESULT	MRL					
	Naphthalene	ND	383	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons ¹	ND	29					
Diesel PAH	2-Methylnaphthalene	ND	383	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons ¹	ND	29					
Analytes	Phenanthrene	ND	383	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons ^{1,2}	ND	29					
	Acenaphthylene	ND	383	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	29					
a total a laboration	Acenaphthene	ND	383	Sample Surrogate Acceptance I	Range: 40-14	0%					
	Anthracene	ND	383	Aliphatic Surrogate % Recovery	53						
and the property	Benzo[a]anthracene	ND	383	Aromatic Surrogate % Recovery	55	5					
	Benzo[a]pyrene	ND	383	Fractionation Surrogate Acceptant	ce Range: 60	-140%					
Other PAH	Benzo[b]fluoranthene	ND	383	#1 Fractionation Surrogate % Recovery	N/.	A					
Target	Benzo[k]fluoranthene	ND	383	#2 Fractionation Surrogate % Recovery	N/.	A					
Analytes	Chyrsene	ND	383		CONTRACTOR OF THE PARTY OF THE						
	Dibenzo[a,h]anthracene	ND	383	Hydrocarbon Range data exclude cond	centrations of	any					
	Fluoranthene	ND	383	surrogate(s) and/or internal standards el	uting in that r	ange.					
	Fluorene Line	ND	383								
	Indeno(1,2,3-cd)pyrene	ND	383	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the							
	Pyrene	ND	383	83 concentrations of PAH Target Analytes.							
	Benzo[g,h,i]perylene	ND	383	· 1987年 - 19884 - 19884 - 19884 - 19884 - 19884 - 19884 - 19884 - 19884 - 198							

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

QUALITY CONTROL SECTION

Mr.

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS SOIL SURROGATE RECOVERY

Client: Resource Controls

Client Project ID: Woodbine

ESS Project ID: 980875

Sample ID	DCE#	TOL#	BFB#
VMA040398B1	86	97	93
980875-01	88	96	94
980875-02	86	100	95
980875-03	85	97	88

DCE = DICHLOROETHANE-D4 (70-121%)

TOL = TOLUENE-D8 (81-117%)

BFB = BROMOFLUOROBENZENE (74-121%)

Approved by:

Date: ____

4/15/18

[#] Column to be used to flag recovery values with an asterisk when outside the quality control range.

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls Client Project ID: Woodbine

Client Sample ID: Method Blank

Date Sampled: N/A Date Analyzed: 4/3/1998 ESS Project ID: 980875

ESS Sample ID: VMA040398B1

Dilution Factor: 1 Units: µg/Kg

Parameter	Resul		MRL
Dichlorodifluoromethane	ND		5
Chloromethane	ND		5
Vinyl Chloride	ND		5 5 5 5
Bromomethane	ND		5
Chloroethane	ND		5
Trichlorofluoromethane	ND		5
1,1-Dichloroethene	ND		5
Methylene Chloride	ND		5
Methyl tert-Butyl Ether	ND		5
trans-1,2-Dichloroethene	ND		5
1,1-Dichloroethane	ND		5 5 5 5 5 5 5
trans-1,2-Dichloroethene	ND		5
Chloroform	ND		5
1,1,1-Trichloroethane	ND		5
Carbon Tetrachloride	ND		
Benzene	ND		
1,2-Dichloroethane	ND	•	
Trichloroethene	ND		
1,2-Dichloropropane	ND		
Bromodichloromethane	ND		•
2-Chloroethylvinyl ether	ND		50
Cis-1,3-Dichloropropene	ND		
Toluene	ND)	•
Trans-1,3-Dichloropropene	ND		ai .
1,1,2-Trichloroethane	ND ND		:
Tetrachloroethene	ND		:
Dibromochloromethane	ND		:
Chlorobenzene	ND		•
Ethylbenzene	NE		
Bromoform	NE	•	•
1,1,2,2-Tetrachloroethane	NE		:
1,3-Dichlorobenzene	NI		
1,4-Dichlorobenzene	NI		;
1,2-Dichlorobenzene	NI NI		;
1,2-Dictiloroughzene			

٦	V	Ά	=	No	et A	hot	oli	cal	ble
	7/	4 5		7 16	,,	NU	,,,,,	v	~~

ND = Not Detected above Method Reporting Limit (MRL)

Approved by:

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8100M

Client: Resource Controls Client Project ID: Woodbine Client Sample ID: Method Blank

Date Sampled: N/A
Date Received: N/A
Date Extracted: 4/6/1998

ESS Project ID: 980875 ESS Sample ID: 0406-B3 Date Analyzed: 4/13/1998

F1 Dilution Factor: 1 F2 Dilution Factor: 1 Analyst: JAR

Matrix: Soil

Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3545 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

SAMPLE INFORMATION

H Surrogate Star	ndard ID	拉门的数据		EPH Fractionation	n Surrogate ID		folkum			
HY122497B				WHY022798A						
	Target Analytes		· ·	Range Analytes						
Units:	ug/kg (dry wt.)	RESULT	MRL	Units:	mg/kg (dry wt.)	RESULT	MRL			
	Naphthalene	ND	370	F1: C ₉ -C ₁₈ Alipha	tic Hydrocarbons ¹	ND	25			
Diesel PAH	2-Methylnaphthalene	ND	370	F1: C19-C36 Aliph	atic Hydrocarbons	ND	25			
Analytes	Phenanthrene	ND	370	F2: C11-C22 Arom	atic Hydrocarbons ^{1,2}	ND	25			
	Acenaphthylene 1	ND	. 370	F2: Unadjusted C	11-C22 Aromatics	ND	25			
	Acenaphthene	ND	370	Sample Su	urrogate Acceptance F	Range: 40-14	0%			
	Anthracene Anthracene	ND	370	Aliphatic Surroga	te % Recovery	73				
	Benzo[a]anthracene	ND	370	Aromatic Surroga	ite % Recovery	37				
	Benzo[a]pyrene	ND	370	Fractionation	n Surrogate Acceptant	e Range: 60	-140%			
Other PAH	Benzo[b]fluoranthene	ND	370	#1 Fractionation S	Surrogate % Recovery	N/A	A			
Target	Benzo[k]fluoranthene	ND	370	#2 Fractionation S	Surrogate % Recovery	N/	A			
Analytes	Chyrsene	ND	370			1137	aresi (sen			
	Dibenzo[a,h]anthracen	e ND	370	已然是自己的发展。在2000年间的ADA的不同时间的图像。	Range data exclude con	では、大学のでは、大学のでは、大学のできます。	市工 而之 用的 好 网络内容体			
	Fluoranthene	ND	370	surrogate(s) and	or internal standards el	uting in that r	ange.			
	Fluorene	ND	370							
	Indeno(1,2,3-cd)pyrene	ND	370	² C ₁₁ -C ₂₂ Aroma	tic Hydrocarbons exclu	de the				
	Pyrene	ND	370	370 concentrations of PAH Target Analytes.						
	Benzo[g,h,i]perylene	ND	370							

ND = Not detected above Method Reporting Limit (MRL)

N/A = Not applicable

DL = Sample diluted out of calibration range

Approved by:

Date: 4/////s

ESS LABORATORY CERTIFICATIONS

Rhode Island: 179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire:

Drinking Water: 242498-A

Wastewater: 242498-B

New Jersey: 78002

New York: 11313

Environmental Analysis/Water:101770

Solid and Hazardous Waste: 101770

CHAIN OF CUSTODY

Page	/ of	- (
<i>-</i>		

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211

	Tel. (401) 461-7181 Fax (401) 461-4486						Turn Time Standard (2 Weeks) Other Standard (2 Weeks) Other													
Co. Name RESOURCE	CONTRO	LS	A	ject # 46	40	006 Project Name	SINE						A	nalysi	s Requ	ired				
Contact Person			Add	Iress	Ϋ́			ers		1 2		द्धार		1		'		1		//
City PAWTUCK	ET	State R1		σz			- 6860	Number of Containers	Type of Container	80,0		9270 4				. [.				
Purchase Order #	5089)			上	727-1849		ber of	of Cor	1	1		1					1 :		
ESS LAB Sample #	Date	Collection Time	СОМР	GRAB	MATRIX	Sample Identifica	tion	Num	Туре	NOC	FPH	PAH			\perp	L				\bot
	4/1/98	1200		٧	5	MW-ID		2	G	4	<u>~</u>	<u> </u>			_		_	_		1
	4/2/98	1200		~	5	MW-2D		2	G	4	4			-	-	1		_		
	4/2/98	1500		/	S	MW-4D		2	8	И	~		<u> </u>				\rightarrow	_	_	
													Ш					_		
												<u> </u>								
ı																				
													П							
														.				Ì	\Box	
	;									\Box			\Box	_				_	1	
			 					-	ì	\vdash				1	_	+			\dashv	+
	n n 1	C Cl	<u></u>		terile	V-VOA Matrix:	DW-Drinking	Water		S-Sol	id.	G	W-Gro	und V	Vater		WW-1	Waste	Water	
Container Type:	P-Poly	G-Glass		3-3	cerno	V-VOA Matrix.	D w-Dimanig	Water		3-30	ild.		010							
Seals Intact:	Yes	No Com	ment	s:		· ·														
Cooler Temp:	_																			
Relinquisted by: (Signature) Date/Tim				$n \sim$		Signature) Date/Tin	Relinguished by: (S	Signatu	re)			/Time					w	سر	Da	1/35
						Signature) Date/Tin			Date/Time Received by: (Signature) Date/Ti											

CHAIN OF CUSTODY

Page / of /

ESS-LAB PROJECT ID

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel (401) 461-7181 Fax (401) 461-4486

161.(40)	401	-/10.	1 rax (40	11) 1	401	446	80	Standard (2 Wee	ks)	Oth	er	, -	<u>UM7</u>								
Co. Name RESOURCE	COL	osiiv	ال-ا	Pro	ject 1/84	# <i>P</i>	14640 Project Name 006 TAUNDA/WOO	BINE						An	alysis R	Require	ed				
Contact Person PAT CORCO				Ad	dress 74	13e	OADWAY	1). Te				\prod				1		11		1
City PAWW(K.E			State R			oze	72 Zip Tel. YOI 72	પ્ડ- 6J6O	Number of Container	tziner	(8310)					!					
Purchase Order#	50	797		·	.	<u> </u>	401 727-1849		ıber of (Type of Container	11 I	\neg	- 1								
ESS LAB Sample #	D	ate	Collection Time	COMP	GRAB	MATRIX	Sample Identificati	on	Num	Type	Vocs	17/14	Has	Ш		Ш				L	
	48	398	3:45				Mw-21		4	G	V	<u>/</u> \	/_						1_		
		\	2:20				MW-43		4	G	V	<u>/ </u>	4_				_		1		
			4:00				MW-D	·	4	G	<u> </u>	1					_		1_	_	
			2:40				MW-2D		4	G	V	4								4	
			2:00				MW-4D		4	G	1.	<u> </u>					_			(A) (a)	<u> </u>
	-		4:15		T :		Mw-5		4	G	V 1	/ "									
			5:00			:	MW-6		4	G	4	/ /									
•	1	Y	3:20				MW-7		4	G	V	//	4								<u> </u>
	_	-	-				MW-8P										_	\perp	\perp		<u> </u>
2	-	1		-	_		WW-9P-			,										<u> </u>	<u> </u>
			D ?						<u> </u>												
	C						0	4												1	
Container Type:	P-P	oly .	G-Glass	,	S-S	Steril	V-VOA Matrix:	DW-Drinkin	g Water		S-Soli	d	G/	V-Grou	nd Wat	ter	1	WW-W	aste wa	ter	
Seals Intact:	Ye		No Com	men	ts:		0/2					-					.				
Cooler Temp:	ه -	ž		,		- 1															
Relinquished by: (Sig	gnature)	,	Date/Time	Re	ocive	а Бу	(Signature) Date/Time	Relinquished by: ((Signatu	re)		Date/	Time	Receive	d by: (Si	gnatur	~e)			Date/	Time
Manal							Signature) Dise/Time	Relinguished by: ((Sianatu)		Date/	Time	Receive	d by: (Si	enatur	~)			Date/	Time
Relinquished by: Sig	nature)		Date/ I ime	Ke	ccive	u py:	(aiRiiatrite) Dibe, Lime	Neunquisited by: (/aiRuatn	ture) Date/Time Received by: (Signature)								2.34160			
											_										

Turn Time

APPENDIX D

Laboratory Certificates of Groundwater Analysis

ESS Laboratory JAN 0 6 1998

Division of Thielsch Engineering, Inc.

December 31, 1997

Mr. Pat Corcoran Resource Controls 474 Broadway Street Pawtucket, RI 02860

Dear Mr. Corcoran:

We appreciate this opportunity to provide you with our analytical services. ESS Laboratory is committed to providing the highest quality service. Our dedication to each client includes responsiveness to emergencies, dependable, well-written reports, and client services which include the availability of all analysts to answer your inquiries.

Enclosed is your data report. The corresponding project invoice is being forwarded to your Accounts Payable Department. Samples will be disposed of thirty days after the final report is mailed. If you have any questions or concerns, please feel free to call our Customer Service Department. We value our continued relationship and look forward to hearing from you in the future.

Sincerely,

ESS LABORATORY

Laurel Stoddard Laboratory Manager

Enclosure

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

CLIENT: Resource Controls

CLIENT PROJECT ID: Taunton-Woodbine St.

ESS PROJECT ID: 973936

Sample Receipt

Five liquid samples were received on December 22, 1997 for the analyses specified on the enclosed Chain of Custody Record.

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. These analyses with these noted observations are in conformance to the Quality Assurance Plan.

Dissolved Oxygen:

This analysis was not performed due to improper sampling protocol.

No other observations noted.

This signed Certificate of Analysis is our approved release of your analytical results. Beginning with this Project Narrative, the entire report has been paginated. The Chain of Custody is the final report page. This report should not be copied except in full without the approval of the laboratory.

End of project narrative.

Laurel Stoddard/Eric Baanante

Laboratory Manager/Operations Manager

12/31/92 Date

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-2

ESS Project ID: 973936

ESS Sample ID: 973936-01

Date Sampled: 12/22/97

Parameter	Result	Units	MRL	Date Analyzed	Method	Analyst
Alkalinity	127	mg/L	7	12/29/97	301.1	SM
Nitrate	1.5	mg/L	0.1	12/24/97	353.3	СТТ
Chloride	50	mg/L	3	12/24/97	300.0	JAH
Chemical Oxygen Demand	7	mg/L	5	12/31/97	410.4	JAH
Total Cyanide	ND	mg/L	0.01	12/29/97	335.2	JAH
Sulfate	34	mg/L	5	12/24/97	300.0	JAH
Total Dissolved Solids	328	mg/L	- 5	12/29/97	160.1	CTT

ND = Not Detected above Method Reporting Limit (MRL)

Approved by: Las 185 Frances Avenue, Cranston, RI 02910-9975

Date: 1298

2

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

DISSOLVED METALS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-2

Date Sampled: 12/22/97

ESS Project ID: 973936

ESS Sample ID: 973936-01

Date Reported: 12/31/97

	÷					
Parameter	Result	Units	MRL	Date Analyzed	Method	Analyst
Dissolved Metals		,				
•						i esto.
Arsenic	ND	mg/L	0.1	12/24/97	6010	CEL
Barium	ND	mg/L	0.2	12/24/97	6010	CEL
Cadmium	ND	mg/L	0.01	12/24/97	6010	CEL
Chromium	ND	mg/L	0.05	12/24/97	6010	CEL
Copper	ND	mg/L	0.02	12/24/97	6010	CEL
Iron	0.2 B	mg/L	0.1	12/29/97	6010	CEL
Lead	.ND	mg/L	0.1	12/24/97	6010	CEL
Manganese	0.24	mg/L	0.03	12/29/97	6010	CEL
Mercury	ND	mg/L	0.0005	12/29/97	7470	CEL
Selenium	ND	mg/L	0.1	12/24/97	6010	CEL
Silver	ND	mg/L	0.01	12/24/97	6010	CEL
Zinc	0.16	mg/L	0.05	12/24/97	6010	CEL

ND = Not Detected above Method Reporting Limit (MRL)

B = Present in procedural blank at 0.2 mg/l.

Approved by: UAS

Date: 1/2/98

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260A

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: MW-2
Date Sampled: 12/22/97
Date Analyzed: 12/23/1997

ESS Project ID: 973936 ESS Sample ID: 973936-01

Dilution Factor: 1 Units: ug/L

Result MRL Parameter MRL Result Parameter ND 5 Chlorobenzene 10 ND Dichlorodifluoromethane 5 1,1,1,2-Tetrachloroethane ND 10 ND Chloromethane ND 5 **Ethyl Benzene** ND 10 Vinyl Chloride 5 ND Xylenes (Total) 10 ND Bromomethane 5 ND Styrene 10 ND Chloroethane 5 ND **Bromoform** 5 ND Trichlorofluoromethane 5 ND Isopropylbenzene 5 ND 1.1-Dichloroethene 5 ND 1.2.3-Trichloropropane 5 ND Methylene Chloride 10 ND Bromobenzene 5 ND Methyl tert-Butyl Ether 5 ND 1,1,2,2-Tetrachloroethane 5 ND Trans-1,2-Dichloroethene 5 ND n-Propylbenzene 5 11 1,1-Dichloroethane 5 ND 2-Chlorotoluene 125 200* Cis-1,2-Dichloroethene 5 ND 4-Chlorotoluene 10 ND 2,2-Dichloropropane 5 ND 1,3,5-Trimethylbenzene 10 ND Bromochloromethane 5 ND tert-Butylbenzene 5 ND Chloroform 5 ND 1,2,4-Trimethylbenzene 5 39 1,1,1-Trichloroethane 5 ND sec-Butylbenzene 10 ND 1.1-Dichloropropene 5 ND 1.3-Dichlorobenzene 5 Carbon Tetrachloride ND 5 ND 5 4-Isopropyitoluene 9 Benzene 5 ND 1.4-Dichlorobenzene ND 5 1.2-Dichloroethane 5 ND n-Butylbenzene 125 950* **Trichloroethene** 5 16 1.2-Dichlorobenzene ND 5 1,2-Dichloropropane 5 1.2-Dibromo-3-chloropropane ND 10 ND Dibromoethane 5 9 1.2.4-Trichlorobenzene 5 ND Bromodichloromethane 5 ND Hexachlorobutadiene 5 ND Cis-1,3-Dichloropropene 5 ND Naphthalene 5 ND Toluene 5 8 1.2.3-Trichlorobenzene 5 ND Trans-1.3-Dichloropropene 100 ND 5 Acetone 1.1.2-Trichloroethane ND 100 ND 2-Butanone 5 ND 1,3-Dichloropropane 50 ND 4-Methyl-2-pentanone 5 ND Tetrachloroethene 50 ND 2-Hexanone 5 Dibromochloromethane ND ND Carbon Disulfide ND 1.2-Dibromoethane

								144 44
' =	Res	sult	and	MRL	based	on	25x	dilution.

ND= Not Detected above Method Reporting Limit (MRL)

Approved by: _____

Date: 12/3/193

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-3

ESS Project ID: 973936

ESS Sample ID: 973936-02

Date Sampled: 12/22/97

Parameter	Result	Units	MRL	Date Analyzed	Method	Analyst
Alkalinity	90	mg/L	2	12/29/97	301.1	SM
Nitrate	0.04	mg/L	0.02	12/24/97	353.3	CTT
Chloride	26	mg/L	3	12/24/97	300.0	JAH
Chemical Oxygen Demand	94	mg/L	50	12/31/97	410.4	JAH
Total Cyanide	ND	mg/L	0.01	12/29/97	335.2	JAH
Sulfate	51	mg/L	5	12/24/97	300.0	JAH
Total Dissolved Solids	287	mg/L	5	12/29/97	160.1	CTT

ND = Not Detected above Method Reporting Limit (MRL)

Approved by: USS 185 Frances Avenue, Cranston, RI 02910-9975

Date: 1298 Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

DISSOLVED METALS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-3

Date Sampled: 12/22/97

ESS Project ID: 973936

ESS Sample ID: 973936-02

Date Reported: 12/31/97

						•
Parameter	Result	Units	MRL	Date Analyzed	Method	Analyst
Dissolved Metals						•
Arsenic	ND	mg/L	0.1	12/24/97	6010	CEL
Barium	ND	mg/L	0.2	12/24/97	6010	CEL
Cadmium	ND	mg/L	0.01	12/24/97	6010	CEL
Chromium	ND	mg/L	0.05	12/24/97	6010	CEL
Copper	ND	mg/L	0.02	12/24/97	6010	CEL
Iron	0.5 B	mg/L	0.1	12/29/97	6010	CEL
Lead	0.1	mg/L	0.1	12/24/97	6010	CEL
Manganese	1.82	mg/L	0.03	12/29/97	6010	CEL
Mercury	ND	mg/L	0.0005	12/29/97	7470	CEL
Selenium	ND	mg/L	0.1	12/24/97	6010	CEL
Silver	ND	mg/L	0.01	12/24/97	6010	CEL
Zinc	ND	mg/L	0.05	12/24/97	6010	CEL

ND = Not Detected above Method Reporting Limit (MRL)

B = Present in procedural blank at 0.2 mg/l.

Approved	by:	ب	P3	

Date: 1/2/98

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260A

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: MW-3
Date Sampled: 12/22/97
Date Analyzed: 12/23/1997

ESS Project ID: 973936 ESS Sample ID: 973936-02

Dilution Factor: 1 Units: ug/L

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	3 10 mg	Chlorobenzene	64	5
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND	5
Vinyl Chloride	ND	10	Ethyl Benzene	ND	5
Bromomethane	ND	10	Xylenes (Total)	ND	5
Chloroethane	ND	10	Styrene	ND	5 5
Trichlorofluoromethane	ND	5	Bromoform	ND	
1,1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	. 5
1,1-Dichloroethane	19	5	n-Propylbenzene	ND	5
Cis-1,2-Dichloroethene	79	5	2-Chlorotoluene	ND .	5
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	5
Chloroform	ND	5	tert-Butylbenzene	ND	5
1.1.1-Trichloroethane	48	5	1,2,4-Trimethylbenzene	ND	5
1,1-Dichloropropene	ND	10	sec-Butylbenzene	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND .	5
Benzene	ND	5	4-Isopropyltoluene	ND	5
1,2-Dichloroethane	· ND	5	1,4-Dichlorobenzene	ND	5
Trichloroethene	255*	25	n-Butylbenzene	ND	5
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	15	5
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	5
Bromodichloromethane	ND	5	1,2,4-Trichlorobenzene	27	5
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	5
Toluene	ND	5	Naphthalene	ND	5
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	16	5
1,1,2-Trichloroethane	NĎ	. 5	Acetone	ND	100
1,3-Dichloropropane	ND	5	2-Butanone	ND	100
Tetrachloroethene	ND	5	4-Methyl-2-pentanone	ND	50
Dibromochloromethane	ND	5	2-Hexanone	ND	50
1,2-Dibromoethane	ND	5	Carbon Disulfide	ND	5

= Result and MRL based on 5x dilution.		— ·	
ND= Not Detected above Method Reporting Limit (MRL)		1 1	
Approved by:	Date:	12/31/97	

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-4

ESS Project ID: 973936

ESS Sample ID: 973936-03

Date Sampled: 12/22/97

Parameter	Result	Units	MRL	Date Analyzed	Method	Analyst
Alkalinity	69	mg/L	2	12/29/97	301.1	SM
Nitrate	ND	mg/L	0.02	12/24/97	353.3	CTT
Chloride	37	mg/L	3	12/24/97	300.0	JAH
Chemical Oxygen Demand	120	mg/L	50	12/31/97	410.4	JAH
Total Cyanide	ND	mg/L	0.01	12/29/97	335.2	JAH
Sulfate	32	mg/L	5	12/24/97	300.0	JAH
Total Dissolved Solids	280	mg/L	5	12/29/97	160.1	CTT

ND = Not Detected above Method Reporting Limit (MRL)

Approved by: USS 185 Frances Avenue, Cranston, RI 02910-9975

Date: 1298

C

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

DISSOLVED METALS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-4

Date Sampled: 12/22/97

ESS Project ID: 973936

ESS Sample ID: 973936-03

Date Reported: 12/31/97

·							
Parameter		Result	Units	MRL	Date Analyzed	Method	Analyst
Dissolved Meta	als						
Arsenic		ND	mg/L	0.1	12/24/97	6010	CEL
Barium		ND	mg/L	0.2	12/24/97	6010	CEL
Cadmium	·	ND	mg/L	0.01	12/24/97	6010	CEL
Chromium		ND	mg/L	0.05	12/24/97	6010	CEL
Copper		ND	mg/L	0.02	12/24/97	6010	CEL
Iron	•	3.6 B	mg/L	0.1	12/29/97	6010	CEL
Lead		ND	mg/L	0.1	12/24/97	6010	CEL
Manganese		1.34	mg/L	0.03	12/29/97	6010	CEL
Mercury		ND	mg/L	0.0005	12/29/97	7470	CEL
Selenium		ND	mg/L	0.1	12/24/97	6010	CEL
Silver		ND	mg/L	0.01	12/24/97	6010	CEL
Zinc		ND	mg/L	0.05	12/24/97	6010	CEL

ND = Not Detected above Method Reporting Limit (MRL)

B = Present in procedural blank at 0.2 mg/l.

Approved by:	 UBS

Date: 1/2/98

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260A

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: MW-4
Date Sampled: 12/22/97

Date Analyzed: 12/23/1997

ESS Project ID: 973936 ESS Sample ID: 973936-03

Dilution Factor: 1

Units: ug/L

Parameter	Result	MRL malas an	Parameter	Result	MRL
Dichlorodifluoromethane	ND	10	Chlorobenzene	250*	125
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND	5
Vinyl Chloride	36	10	Ethyl Benzene	15	5
Bromomethane	ND	10	Xylenes (Total)	15	5
Chloroethane	ND	10	Styrene	ND	5
Trichlorofluoromethane	ND	5	Bromoform	ND	5
1,1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	- 5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	6	. 5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	64	5	n-Propylbenzene	ND	5
Cis-1,2-Dichloroethene	350*	125	2-Chlorotoluene	ND.	5
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	5
Chloroform	ND	5	tert-Butylbenzene	ND	- 5
1,1,1-Trichloroethane	175*	125	1,2,4-Trimethylbenzene	ND	5
1,1-Dichloropropene	ND	10	sec-Butylbenzene	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Benzene	ND	5	4-Isopropyltoluene	ND	5
1,2-Dichloroethane	ND	5	1,4-Dichlorobenzene	ND	. 5
Trichioroethene	725*	125	n-Butylbenzene	ND	5
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	13	5
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	5
Bromodichloromethane	ND	5	1,2,4-Trichlorobenzene	69	5
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	5
Toluene	7	5	Naphthalene	ND	5
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	43	5
1,1,2-Trichloroethane	ND	5	Acetone	385	100
1,3-Dichloropropane	ND	5	2-Butanone	ND	100
Tetrachloroethene	ND	5	4-Methyl-2-pentanone	ND	50
Dibromochloromethane	ND	5	2-Hexanone	ND	50
1,2-Dibromoethane	ND	5	Carbon Disulfide	ND	5

' =	Result	and	MRL based on 25x dilution	1
_	LOSUIL	allu	MICH DASEG OH ZOX GHUUUN	1

ND= Not Detected above Method Reporting Limit (MRL)

Approved by: LAS

Date: 12 31 97

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-1

ESS Project ID: 973936

ESS Sample ID: 973936-04

Date Sampled: 12/22/97

Parameter		Result	Units	MRL	Date Analyzed	Method	Analyst
Alkalinity		30	mg/L	2	12/29/97	301.1	SM
Nitrate		1.9	mg/L	0.1	12/24/97	353.3	CTT
Chloride		38	mg/L	3	12/24/97	300.0	JAH
Chemical Oxygen Dem	and	ND	mg/L	5	12/31/97	410.4	JAH
Total Cyanide		ND	mg/L	0.01	12/29/97	335.2	JAH
Sulfate	1	20	mg/L	5	12/24/97	300.0	JAH
Total Dissolved Solids		116	mg/L	5	12/29/97	160.1	СТТ

ND = Not Detected above Method Reporting Limit (MRL)

Approved by: US 185 Frances Avenue, Cranston, RI 02910-9975

Date: 1298 1 Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

DISSOLVED METALS

Client: Resource Controls

Client Project ID: Taunton-Woodbine St.

Client Sample ID: MW-1

Date Sampled: 12/22/97

ESS Project ID: 973936

ESS Sample ID: 973936-04

Date Reported: 12/31/97

				il e			
Parameter		Result	Units	MRL	Date Analyzed	Method	Analyst
			4.47 - 1				
Dissolved Metals			. •				
Arsenic	•	ND	mg/L	0.1	12/24/97	6010	CEL
Barium		ND	mg/L	0.2	12/24/97	6010	CEL
Cadmium	· ·	ND	mg/L	0.01	12/24/97	6010	CEL .
Chromium		ND	mg/L	0.05	12/24/97	6010	CEL
Copper		ND	mg/L	0.02	12/24/97	6010	CEL
Iron		0.2 B	mg/L	0.1	12/29/97	6010	CEL
Lead		ND	mg/L	0.1	12/24/97	6010	CEL
Manganese		0.24	mg/L	0.03	12/29/97	6010	CEL
Mercury		ND	mg/L	0.0005	12/29/97	7470	CEL
Selenium		ND	mg/L	0.1	12/24/97	6010	CEL
Silver		ND	mg/L	0.01	12/24/97	6010	CEL
Zinc		ND	mg/L	0.05	12/24/97	6010	CEL
•	•				•		

ND = Not Detected above Method Reporting Limit (MRL)

B = Present in procedural blank at 0.2 mg/l.

Approved	by:	UPS	
----------	-----	-----	--

Date: 1298

12

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260A

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: MW-1
Date Sampled: 12/22/97
Date Analyzed: 12/23/1997

ESS Project ID: 973936 ESS Sample ID: 973936-04

Dilution Factor: 1 Units: ug/L

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	10	Chlorobenzene	ND	5
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND	5
Vinyl Chloride	ND	10	Ethyl Benzene	ND	5
Bromomethane	ND	10	Xylenes (Total)	ND	5 5
Chloroethane	ND	10	Styrene	ND	5
Trichlorofluoromethane	ND	5	Bromoform	ND	5
1,1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	n-Propylbenzene	ND	5
Cis-1,2-Dichloroethene	10	5	2-Chlorotoluene	ND	
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5 5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	5
Chloroform	ND	5	tert-Butylbenzene	ND	5
1,1,1-Trichloroethane	11	5	1,2,4-Trimethylbenzene	ND	5
1,1-Dichloropropene	ND	10	sec-Butylbenzene	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Benzene	ND	5	4-Isopropyltolüene	ND	5
1,2-Dichloroethane	ND	5	1,4-Dichlorobenzene	ND	5
Trichloroethene	230*	25	n-Butylbenzene	ND	5
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	ND	5
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	· 5
Bromodichloromethane	ND	5	1,2,4-Trichlorobenzene	ND	- 5
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	5
Toluene	ND	5	Naphthalene	ND	, 5 5
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	ND	5 5
1,1,2-Trichloroethane	ND	5	Acetone	ND	100
1,3-Dichloropropane	ND	5	2-Butanone	ND ND	100
Tetrachloroethene	ND	5	4-Methyl-2-pentanone	ND ND	50
Dibromochloromethane	ND	5	2-Hexanone	ND ND	50 50
1,2-Dibromoethane	ND	5	Carbon Disulfide	ND ND	5 5
* = Result and MRI based on			Caracin Blodnido	ואט	<u> </u>

×	=	F	₹es	u	t	and	MF	₹L	based	1	01	1	5x	(dilution.
										_	_				

ND= Not Detected above Method Reporting Limit (MRL)

Approved by:______

Date: 12/31/97

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260A

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: Trip Blank
Date Sampled: 12/22/97
Date Analyzed: 12/23/1997

ESS Project ID: 973936 ESS Sample ID: 973936-05

Dilution Factor: 1

Units: ug/L

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	10	Chlorobenzene	ND	5
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND	5
Vinyl Chloride	ND	10	Ethyl Benzene	ND	. 5
Bromomethane	ND	10	Xylenes (Total)	ND	5
Chloroethane	ND	10	Styrene	ND	5
Trichlorofluoromethane	ND	5	Bromoform	ND	5
1.1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	. 5	1,2,3-Trichloropropane	ND	5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1.1-Dichloroethane	ND	5	n-Propyibenzene	ND	5
Cis-1,2-Dichloroethene	ND	5	2-Chlorotoluene	ND	5
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	NĎ	5
Chloroform	ND	5	tert-Butylbenzene	ND	5
1,1,1-Trichloroethane	ND	5	1,2,4-Trimethylbenzene	ND	5
1,1-Dichloropropene	ND	10	sec-Butylbenzene	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Benzene	ND	5	4-isopropyltoluene	ND	5
1,2-Dichloroethane	ND	5	1,4-Dichlorobenzene	ND	-5
Trichloroethene	ND	5	n-Butylbenzene	ND	. 5
1,2-Dichloropropane	ND .	5	1,2-Dichlorobenzene	ND ·	5
Dibromoethane	ND .	10	1,2-Dibromo-3-chloropropane	ND	5
Bromodichloromethane	ND	5	1,2,4-Trichiorobenzene	ND	5
	ND	5	Hexachlorobutadiene	ND	5
Cis-1,3-Dichloropropene	ND	5	Naphthalene	ND	5
Toluene	ND	5	1,2,3-Trichlorobenzene	ND	5
Trans-1,3-Dichloropropene	ND	5	Acetone	ND	100
1,1,2-Trichloroethane	ND	5	2-Butanone	ND	100
1,3-Dichloropropane	ND ND	5	4-Methyl-2-pentanone	ND	50
Tetrachioroethene		5	2-Hexanone	ND	50
Dibromochloromethane 1,2-Dibromoethane	ND ND	. 5 . 5	Carbon Disulfide	ND	5

ND= Not Detected above Method Reporting Limit (MRL)		1 100	
Approved by: LAS	Date:	12/31/97	

QUALITY CONTROL SECTION

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS AQUEOUS SURROGATE RECOVERY

lient: Resource Controls

lient Project ID: Taunton-Woodbine St.

ESS Project ID: 973936

Sample ID	DCE#	TOL#	BFB#
	%	%	%
40 m 10000m 1	104	110	**************************************
MB122397B1	106	110	111
73936-01	107	108	109
973936-01 (25x)	114	102	112
73936-02 °	110	99	106
973936-02 (5x)	112	104	110
2 73639-03	103	106	102
73639-03 (25x)	112	102	107
973936-04	106	105	109
73936-05	106	105	108
MB122497B1	109	106	107
<u>9</u> 73936-04 (5x)	105	105	108
			• .

Column to be used to flag recovery values with an asterisk when outside the quality control range.

DCE = 1,2 DICHLOROETHANE-D4 (76-114%)

TOL = TOLUENE-D8 (86-110%)

FB = BROMOFLUOROBENZENE (86-115%)

Approved by:	LAS
, , , , , , , , , , , , , , , , , , , ,	

Date: 12/31/97

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: Method Blank

Date Sampled: N/A

Date Analyzed: 12/23/1997

ESS Project ID: 973936

ESS Sample ID: VMB122397B1

Dilution Factor: 1

Units: ug/L

Parameter	Result	MRL	Parameter	Result	MRL
Dichlorodifluoromethane	ND	10	Chlorobenzene	ND	5
Chloromethane	ND	10	1,1,1,2-Tetrachloroethane	ND	5
Vinyl Chloride	ND	10	Ethyl Benzene	ND	5
Bromomethane	ND	10	Xylenes (Total)	ND	5
Chloroethane	ND	10	Styrene	ND	5
Trichlorofluoromethane	ND	5	Bromoform	ND	5
1,1-Dichloroethene	ND	5	Isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	5
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Trans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethane	ND	5	n-Propylbenzene	ND	5
Cis-1,2-Dichloroethene	ND	5	2-Chlorotoluene	ND	5
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	5
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	. 5
Chloroform	ND	5	tert-Butylbenzene	ND	5
1,1,1-Trichloroethane	ND	5	1,2,4-Trimethylbenzene	ND	. 5
1,1-Dichloropropene	ND	10	sec-Butylbenzene	ND	5
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	5
Benzene	ND	5	4-isopropyitoluene	ND	5
1,2-Dichloroethane	ND	5	1,4-Dichlorobenzene	ND	5
Trichloroethene	ND	5	n-Butylbenzene	ND	, 5
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	ND	5
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	5
Bromodichloromethane	ND	5	1,2,4-Trichlorobenzene	ND	5
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	5
Toluene	ND	5	Naphthalene	ND	-5
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	ND -	. 5
1,1,2-Trichloroethane	ND	5 ⁻	Acetone	ND	100
1,3-Dichloropropane	ND	5	2-Butanone	ND	100
Tetrachioroethene	ND	5	4-Methyl-2-pentanone	ND	50
Dibromochloromethane	ND	5	2-Hexanone	ND	50
1,2-Dibromoethane	ND	5	Carbon Disulfide	ND	

NI/A -	Not A	nnlicable

ND= Not Detected above Method Reporting Limit (MRL)

Approved by:

Date: 12/31/97

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS Method 8260

Client: Resource Controls

Client Project ID: Taunton-Woodbine St

Client Sample ID: Method Blank

Date Sampled: N/A

Date Analyzed: 12/24/1997

ESS Project ID: 973936

ESS Sample ID: VMB122497B1

Dilution Factor: 1

Units: ug/L

Parameter	Result	MRL	Parameter	Result	
Dichlorodifluoromethane	ND	10	Chlorobenzene	ND	5
Chloromethane	NĎ	10	1,1,1,2-Tetrachloroethane	ND	5
/inyl Chloride	ND	10	Ethyl Benzene	ND	5
Bromomethane	ND	10 ·	Xylenes (Total)	ND	5
Chloroethane	ND	10	Styrene	ND	5
	ND	5	Bromoform	ND	5
,1-Dichloroethene	ND	5	isopropylbenzene	ND	5
Methylene Chloride	ND	5	1,2,3-Trichloropropane	ND	
Methyl tert-Butyl Ether	ND	5	Bromobenzene	ND	10
Frans-1,2-Dichloroethene	ND	5	1,1,2,2-Tetrachloroethane	ND	
1.1-Dichloroethane	ND	5	n-Propylbenzene	ND	
Cis-1,2-Dichloroethene	ND	. 5	2-Chlorotoluene	ND	
2,2-Dichloropropane	ND	10	4-Chlorotoluene	ND	
Bromochloromethane	ND	10	1,3,5-Trimethylbenzene	ND	• , (
Chloroform	ND	5	tert-Butylbenzene	ND	
1,1,1-Trichioroethane	ND	5	1,2,4-Trimethylbenzene	ND	
1.1-Dichloropropene	ND	10	sec-Butylbenzene	ND	
Carbon Tetrachloride	ND	5	1,3-Dichlorobenzene	ND	
Benzene	ND	5	4-Isopropyltoluene	ND	
1,2-Dichloroethane	ND		1,4-Dichlorobenzene	ND	
Trichloroethene	ND	5	n-Butylbenzene	ND	
1,2-Dichloropropane	ND	5	1,2-Dichlorobenzene	ND	**
Dibromoethane	ND	10	1,2-Dibromo-3-chloropropane	ND	
Bromodichloromethane	ND	5	1,2,4-Trichlorobenzene	ND	•
Cis-1,3-Dichloropropene	ND	5	Hexachlorobutadiene	ND	
Toluene	ND	. 5	Naphthalene	ND	
Trans-1,3-Dichloropropene	ND	5	1,2,3-Trichlorobenzene	ND	
1,1,2-Trichloroethane	ND	. 5	Acetone	ND	10
• •	ND	5	2-Butanone	ND	10
1,3-Dichloropropane Tetrachloroethene	ND	5	4-Methyl-2-pentanone	ND	
•	NĎ	5	2-Hexanone	ND	5
Dibromochloromethane 1,2-Dibromoethane	ND	5	Carbon Disulfide	ND	

N/A = Not Appl	ica	b	le
----------------	-----	---	----

ND= Not Detected above Method Reporting Limit (MRL)

Approved by: _____

Date: 12/31/97

ESS LABORATORY CERTIFICATIONS

Rhode Island: RI002

Connecticut: PH-0750

Maine: RI002

Massachusetts: RI002

New Hampshire:

Drinking Water: 242496-F

Wastewater: 242496-E

New Jersey: 78002

New York: 11313

Environmental Analysis/Water: 033976

Solid and Hazardous Waste: 033977

CHAIN OF CUSTODY

Page	of	
B		

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211

	nces Avenue 1) 461-7181	-					.1				Turn T Star	ime ndard (2 Wee	ks)	Oth	er	5-	ጋ ሎ}	/_		ES	S-LAB	PRO	15g	36			
Co. Name RESOURCE	CONTROLS		Pro A	ject #	10	004	Project TAU	t Nam	ie ~ —	WOO	DDB11	NE ST		,					An	alysis	Requ	ired.	· · ·	<u> </u>			
Contact Person PAT CORCOR	ean			iress 7 <i>4</i>	BR	OADW	AY_						ıers		$ \ $	\int		ZZZ .	त्राम्य					770557			
City PAWTUCKET	·	State RI		(72.8	Zip 60 — 1	1377		Tel. <i>40</i>	//]	728-	6860	Number of Containers	tainer	1	77.10	NITABLE NITTE		يبا أ			-	- 1 :	9 >	1/055	240	2500
Purchase Order #	4955				F	x#401	72	7-18	849				ber of	Type of Container			ATE	107	वान्त्र	HE		1	RC20 0		SA	8-	286
ESS LAB Sample #	Date	Collection Time	COMP	GRAB	MATRIX			Samp	de Iden	tificati	on	ı.	Zun	Туре	2011	AKAI MITTI	NITE	Terre pist	CHLORIDE	SWARTE	20/	8	\$ \$	E	MAN	900	à É
	121297	1230		V	GW	MW-	/		<i>u</i> -				9	8/6/1		<u>/</u>	V	/	<u>/</u>	4	1 1		1	4	4		4/
		1300		1	GW	MWX	2		w·				9	-			4		4	1		+	'	/			$\mathcal{A}_{\mathcal{A}}$
		1330		/	GW	M/D-	3		W -				9	 	,	✓	<u> </u>	 	/ }		1	1.	1	7	/	/	∜,
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1400	_	1	GW	AW-	4	W	<u>w -</u>		. 1		9	<u> Y</u>		✓	V	'	`		+	+	-		+	' -	\dashv
			-			-	U !	7		Q y	1K	<u> </u>			-	-	_	_		+	+	+	+		-	-	\dashv
- 			=	<u>~</u>	<u>s</u>	Tr-6								6				-	\dashv	+	+-	╁	╁┈	\vdash	╌╂	\dashv	\dashv
				├	-									 	\vdash				\dashv	+-	+	+	+		\dashv		-
			-	├		ļ				· ·				 	\vdash		-		_	+	\dashv	╁	+	\vdash			\dashv
		<u> </u>	_	 	_	ļ								 				-	\dashv		+	+	+-			+	1
			-	<u> </u>	<u> </u>									 	-					\dashv	\dashv	+	+	\vdash	\dashv	-	1
			ļ	<u> </u>	_	ļ					-			 			-	-	-+	-	-	+	 -	-1			\dashv
						Ĺ,					·		<u> </u>	<u> </u>	ا		;	C) Y	\perp				10/10/	-Waste			_
Container Type:	(P-Poly	G-Glass		S-S	terile	: (V-VOA		Ma	trix:	1	DW-Drinkin	g Water		S-So	lid		GW	Grou	na W	ater		ww	- W 25U	ewater		4
Seals Intact:	YesN	No Com	ment	:s: /	u e i	MLS	ANA L	YSIS	٠	Fili	TER I	IN LAX	3														
Cooler Temp:	- / -			/		/		,	•			• • • •			,												
Relinquissed by: (Si	ignature)	Date/Time			2	(Signature	C	A	Date			quished by	Ajignati MA		7-3	Dat 426	e/Tim	ic R	eceive	d by:	(Signa	ture)	av	21		ite/Tir	me 745
Religiuished by: Si	gnature)	12/22 42 Date/Time			d by:		<u> </u>	711		Time		equished by:			/						(Signa		w U			te/Tir	
0			\perp													<u></u>		_L_									_]

Division of Thielsch Engineering, Inc.

REC'D APR 2 7 1998

April 15, 1998

Mr. Pat Corcoran Resource Controls 474 Broadway Street Pawtucket, RI 02860

Dear Mr. Corcoran:

We appreciate this opportunity to provide you with our analytical services. ESS Laboratory is committed to providing the highest quality service. Our dedication to each client includes responsiveness to emergencies, dependable, well-written reports, and client services which include the availability of all analysts to answer your inquiries.

Enclosed is your data report. The corresponding project invoice is being forwarded to your Accounts Payable Department. Samples will be disposed of thirty days after the final report has been mailed. If you have any questions or concerns, please feel free to call our Customer Service Department. We value our continued relationship and look forward to hearing from you in the future.

Sincerely,

ESS LABORATORY

Laurel Stoddard

Laboratory Manager

Enclosure

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

PROJECT NARRATIVE

CLIENT: Resource Controls

CLIENT PROJECT ID: Taunton/Woodbine

ESS PROJECT ID: 980957

Sample Receipt

Eight liquid samples were received on April 9, 1998 for the analyses specified on the enclosed Chain of Custody Record.

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. These analyses with these noted observations are in conformance to the Quality Assurance Plan.

No unusual observations noted.

This signed Certificate of Analysis is our approved release of your analytical results. Beginning with this Project Narrative, the entire report has been paginated. The Chain of Custody is the final report page. This report should not be copied except in full without the approval of the laboratory.

End of project narrative.

Laurel Stoddard/Eric Baanante

Laboratory Manager/Operations Manager

4/13/58 Date

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls

Client Project ID: Taunton / Woodbine Client Sample ID: MW-1

Date Sampled: 4/8/98

Date Analyzed: 4/10/1998

ESS Project ID: 980957

ESS Sample ID: 980957-01 Dilution Factor: 1

Units: µg/L Analyst: MB

Parameter	Result	MRL
Dichlorofluoromethane	ND	1
Chloromethane	ND	1
Vinyl Chloride	ND	1
Bromomethane	ND	1
Chloroethane	ND	1
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Methylene Chloride	ND	1
trans-1,2-Dichloroethene	ND	1
1,1-Dichloroethane	ND .	1
cis-1,2-Dichloroethene	5	1
Chloroform	ND	<u> </u>
1,1,1-Trichloroethane	11	1
Carbon Tetrachloride	ND	. 1
1,2-Dichloroethane	ND	1
Trichloroethene	160*	10
1,2-Dichloropropane	ND	<u> </u>
Bromodichloromethane	ND	1
2-Chloroethylvinyl ether	ND	10
Cis-1,3-Dichloropropene	ND	1
Trans-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	ND	1
Dibromochloromethane	ND	1
Chlorobenzene	ND	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	
1,2-Dichlorobenzene	ND	1

ilf and MR	hased on	Ox dilution

ND	= No	t Detected	above M	ethod Re	portine	-Eimit ((MRL)
----	------	------------	---------	----------	---------	----------	-------

Approved by:	
Approved by:	 and the second s

4/21/18

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-1 Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-01 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1 Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

EPH Surrogate Star	ndard ID	10 (2500)		EPH Fractionation Surrogate ID		10000000000000000000000000000000000000
WHY122497B				WHY022798A		
	Target Analytes			Range Analyte	S	
Units:	ug/l	RESULT	Units: mg/l	RESULT	MRL	
企业的联盟报 集	Naphthalene	ND	0.2	F1: C9-C18 Aliphatic Hydrocarbons	ND ;	0.5
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 12	ND	0.5
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	0.5
	Acenaphthene	0.23	0.2	Sample Surrogate Acceptance	Range: 40-14	0%
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	74	1
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	89)
	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptan	ice Range: 60	-140%
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	89)
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery	9	7
Analytes	Chyrsene	ND	0.2			
A STATE OF THE STA	Dibenzo[a,h]anthracene	ND	0.2	Hydrocarbon Range data exclude con		
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards e	luting in that r	ange.
To deliver	Fluorene	ND	0.2			
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclu	ide the	
	Pyrene	ND	0.2	concentrations of PAH Target Analy	tes.	
Arrest Arrest Family	Benzo[g,h,i]perylene	ND	0.2			

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: 4/1/1/

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls
Client Project ID: Taunton / Woodbine

Client Sample ID: MW-3 Date Sampled: 4/8/98

Date Analyzed: 4/10/1998

ESS Project ID: 980957 ESS Sample ID: 980957-02

Dilution Factor: 1 Units: μg/L

Analyst: MB

Parameter	Result	MRI
Dichlorofluoromethane	ND	
Chloromethane	ND	
Vinyl Chloride	ND	· 1
Bromomethane	ND	1
Chloroethane	ND	• 1
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	2	
Methylene Chloride	1 B	. 1
trans-1,2-Dichloroethene	4	1
1,1-Dichloroethane	19	1
cis-1,2-Dichloroethene	325*	25
Chloroform	1 .	1
1,1,1-Trichloroethane	175*	25
Carbon Tetrachloride	ND	·
1,2-Dichloroethane	ND	
Trichloroethene	1050*	25
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	
2-Chloroethylvinyl ether	ND	10
Cis-1,3-Dichloropropene	ND	
Trans-1,3-Dichloropropene	ND	
1,1,2-Trichloroethane	ND	· 1
Tetrachloroethene	6	
Dibromochloromethane	ND	
Chlorobenzene	126	
Bromoform	ND	
1,1,2,2-Tetrachloroethane	ND	· ·
1,3-Dichlorobenzene	1	,
1,4-Dichlorobenzene	11	
1,2-Dichlorobenzene	51	

r = Result and MRL based on 25x dilution	•
--	---

B = Present in associated method blank.

ND = Not Detected above Method Reporting Limit (MRL)

Approved by	/ :	

Date: 4/21/88

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-3
Date Sampled: 4/8/98
Date Received: 4/9/1998
Date Extracted: 4/13/1998

ESS Project ID: 980957 ESS Sample ID: 980957-02 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

EPH Surrogate Star	ndard ID	in that	EPH Fractionation Surrogate ID					
WHY122497B	WHY122497B			WHY022798A				
Target Analytes			Range Analyte	es 🖟 🕌				
Units:	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRL		
	Naphthalene	4.0	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons ¹	ND	0.5		
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5		
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 12	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	0.5		
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance	Range: 40-14	0%		
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	61			
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	94			
11年6月1日新建	Benzo a pyrene	ND	0.2	Fractionation Surrogate Acceptan	nce Range: 60	-140%		
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	90)		
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery	7	7		
Analytes	Chyrsene Chyrsene	ND	0.2	3. 45.1000 经产品的				
	Dibenzo[a,h]anthraceno	ND	0.2	Hydrocarbon Range data exclude con	CONTROL OF THE PARTY OF THE PAR	"国际中国国际国际国际"。		
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards	luting in that r	mge-		
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons excl	ude the			
	Pyrene	ND	0.2	concentrations of PAH Target Analy	rtes.			
	Benzo[g,h,i perylene	ND	0.2	TARGET TO PROPER THE				

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: 4/21/98

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls Client Project ID: Taunton / Woodbine

Client Sample ID: MW-1D Date Sampled: 4/8/98 Date Analyzed: 4/10/1998

ESS Project ID: 980957 ESS Sample ID: 980957-03

Dilution Factor: 1 Units: µg/L Analyst: MB

Parameter		Result			MRL
Dichlorofluoromethane		ND			1
Chloromethane		ND			1
Vinyl Chloride		ND			1
Bromomethane		ND			1
Chloroethane		ND			I
Trichlorofluoromethane		ND			1
1,1-Dichloroethene		ND			ļ
Methylene Chloride	·	ND			1
trans-1,2-Dichloroethene		ND		·	l
1,1-Dichloroethane		ND			1
cis-1,2-Dichloroethene		ND			.1
Chloroform		2			<u> </u>
1,1,1-Trichloroethane		ND			i i
Carbon Tetrachloride		ND			1
1,2-Dichloroethane		ND			1
Trichloroethene		ND			1
1,2-Dichloropropane	•	ND			1
Bromodichloromethane		ND	P		10
2-Chloroethylvinyl ether		ND			10
Cis-1,3-Dichloropropene		ND			.1
Trans-1,3-Dichloropropene		ND			1
1,1,2-Trichloroethane		ND			1
Tetrachloroethene	•	ND			i •
Dibromochloromethane		ND			1
Chlorobenzene		ND			1
Bromoform		ND			1
1,1,2,2-Tetrachloroethane		ND		••	1
1,3-Dichlorobenzene		ND			1
1,4-Dichlorobenzene		ND			1
1,2-Dichlorobenzene		ND			<u>_</u>

ND = Not Detected above Method Reporting Limit (MRL	·)
Approved by:	Date: 4/21/88

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-1D Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-03 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

EPH Surrogate Sta	andard ID			EPH Fractionation Surrogate ID	建	·		
WHY122497B				WHY022798A				
and what are	Target Analytes			Range Analytes	3	70		
Units	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRL		
	Naphthalene	ND	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons	ND	0.5		
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons ¹	ND	0.5		
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 12	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics ¹	- ND	0.5		
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance I	Range: 40-14	0%		
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	53	3		
Jagan Allania	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	98	3		
Carried Control	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptan	ce Range: 60	-140%		
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	94	1		
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery	92	2		
Analytes	Chyrsene	ND	0.2					
	Dibenzo[a,h]anthracene	ND	0.2	1 Hydrocarbon Range data exclude cond		PRODUCE AND ADDRESS OF THE PARTY OF THE PARTY.		
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards el	luting in that r	ange		
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclu	de the			
国际一个自己的	Pyrene	ND	0.2	concentrations of PAH Target Analyt	es.			
The said of the	Benzo[g,h,i]perylene	ND	0.2					

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: 4/21/88

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls
Client Project ID: Taunton / Woodbine

Client Sample ID: MW-2D

Date Sampled: 4/8/98

Date Analyzed: 4/10/1998

ESS Project ID: 980957 ESS Sample ID: 980957-04

Dilution Factor: 1

Units: µg/L Analyst: MB

Parameter	Result	MRL
Dichlorofluoromethane	ND	. 1
Chloromethane	ND	1
Vinyl Chloride	ND	1
Bromomethane	ND	
Chloroethane	ND	1
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	1
Methylene Chloride	4 B	1
trans-1,2-Dichloroethene	2	1
1,1-Dichloroethane	10	1.
cis-1,2-Dichloroethene	125*	25
Chloroform	ND	1
1,1,1-Trichloroethane	175*	
Carbon Tetrachloride	ND	
1,2-Dichloroethane	ND	1
Trichloroethene	1230*	25
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinyl ether	ND	10
Cis-1,3-Dichloropropene	ND	1
Trans-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	. 4	1
Dibromochloromethane	ND	1
Chlorobenzene	2	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
1,3-Dichlorobenzene	ND	. 1
1,4-Dichlorobenzene	ND	1
1,2-Dichlorobenzene	2	1
* = Result and MRL based on 25x dilution.	B = Present in associ	ated method blank

· =	R	esu	t an	d MR	L base	d on	25x	dilution.	

ND = Not Detected above Method Reporting Limit (MRL)

Approved by:

Date: Y/1/5/

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-2D Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-04 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

EPH Surrogate Star	ndard ID	Constitution of the second		EPH Fractionation Surrogate ID		
WHY122497B	AMERICA ST. A. CONTROL OF THE CONTRO			WHY022798A		1595M1425.07429891
	Target Analytes			Range Analytes		
Units:	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRL
	Naphthalene	ND	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons	ND	0.5
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 12	ND	0.5
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics ¹	ND	0.5
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance F	Range: 40-14	0%
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	61	
THE PARTY OF	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	10	1
TO BE AND THE	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptant	ce Range: 60	-140%
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	90)
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery	92	2
Analytes	Chyrsene Chyrsene	ND	0.2	美国主义公司		
	Dibenzo[a,h]anthracen	ND	0.2	Hydrocarbon Range data exclude conc		
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards el	uting in that r	inge.
THE PERSONS ASSESSED.	Fluorene	ND	0.2			
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclu	de the	
计制制 的复数	Pyrene	ND	0.2	concentrations of PAH Target Analyte	s.	
	Benzo g,h,i perylene	ND	0.2			HARR

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date:

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls Client Project ID: Taunton / Woodbine

Client Sample ID: MW-4D Date Sampled: 4/8/98 Date Analyzed: 4/10/1998

ESS Project ID: 980957 ESS Sample ID: 980957-05

Dilution Factor: 1

Units: µg/L Analyst: MB

Parameter	Result	MRL
Dichlorofluoromethane	ND	1
Chloromethane	4	1
Vinyl Chloride	ND	1
Bromomethane	ND	1
Chloroethane	ND	1.
Trichlorofluoromethane	NĎ	1
1,1-Dichloroethene	12	1
Methylene Chloride	2 B	1
trans-1,2-Dichloroethene	3	. 1
1,1-Dichloroethane	. 27	1
cis-1,2-Dichloroethene	375*	25
Chloroform	2	1.
1,1,1-Trichloroethane	275*	25
Carbon Tetrachloride	ND	1
1,2-Dichloroethane	ND	1
Trichloroethene	775*	25
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinyl ether	ND	10
Cis-1,3-Dichloropropene	ND	1
Trans-1,3-Dichloropropene	ND	1
1,1,2-Trichloroethane	1.	1
Tetrachloroethene	4	1
Dibromochloromethane	ND	$\frac{1}{2}$
Chlorobenzene	300*	25
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	2	1
1,2-Dichlorobenzene	15	1
* = Result and MRL based on 25x dilution.	B = Present in associated	d method blank.

VD = Not	Detected	ahove '	Method	Reporting '	Timit (MRT	

Approved by:	
• • • • • • • • • • • • • • • • • • • •	_

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-4D Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-05 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

H Surrogate Standard ID			EPH Fractionation Surrogate ID					
TY122497B	Y122497B			WHY022798A				
Target Analytes				Range Analytes	s. Here was a second			
Units:	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRI		
	Naphthalene	0.37	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons	ND	0.5		
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5		
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 1,2	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	0.5		
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance	Range: 40-14	0%		
Anthracen	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	6	69		
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	10	100		
	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptan	ce Range: 60	-140%		
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	7	8		
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery	7:	9		
Analytes	Chyrsene	ND	0.2					
Dibenzo[a,h Fluoranthen Fluorene	Dibenzo[a,h]anthracen	e ND	0.2	Hydrocarbon Range data exclude concentrations of any				
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards eluting in that range.				
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyren	e ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the				
	Pyrene Pyrene	ND	0.2	concentrations of PAH Target Analyt	es.			
	Benzolg,h,ilperylene	ND	0.2	经第二次的基础地位的		ENDA		

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: V/21/18

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-4D Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-05 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

PH Surrogate Sta	ndard ID			EPH Fractionation Surrogate ID				
HY122497B	IY122497B			WHY022798A				
ATTENDED	Target Analytes		TRIP	Range Analytes				
Units:	ug/1	RESULT	MRL	Units: mg/l	RESULT	MRL		
	Naphthalene	0.37	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons	ND	0.5		
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons ¹	ND	0.5		
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 1,2	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	0.5		
1000年	Acenaphthene	ND	0.2	Sample Surrogate Acceptance Range: 40-140%				
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	69	69		
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery		100		
Marie Carl Ball	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptant	e Range: 60	: 60-140%		
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery				
Target	Benzo[k]fluoranthene:	· ND	0.1	#2 Fractionation Surrogate % Recovery	79)		
Analytes	Chyrsene	ND	0.2					
	Dibenzo[a,h]anthracen	ND	0.2	Hydrocarbon Range data exclude concentrations of any				
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards eluting in that range.				
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the				
	Pyrene Malantin	ND	0.2	concentrations of PAH Target Analyte				
	Benzo[g,h,i]perylene	ND	0.2	SERVICE STREET				

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: Y/21/3

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

ESS Project ID: 980957 Client: Resource Controls ESS Sample ID: 980957-06 Client Project ID: Taunton / Woodbine

Dilution Factor: 1 Client Sample ID: MW-5 Units: µg/L Date Sampled: 4/8/98 Analyst: MB Date Analyzed: 4/10/1998

Parameter		Result	MRI
Dichlorofluoromethane		ND	. 1
Chloromethane		ND	1
Vinyl Chloride	1996年, 特别 的第三人称单数	ND	1
Bromomethane		ND	<u>,</u>
Chloroethane		ND	• 1
Trichlorofluoromethane		ND	1
1,1-Dichloroethene		ND	* 1
Methylene Chloride		ND	1
trans-1,2-Dichloroethene	•	ND	yer rolling
1,1-Dichloroethane		ND	is the state of th
cis-1,2-Dichloroethene		ND	
Chloroform	$\mathcal{L}_{\mathcal{A}} = \{ (1, 1) \mid \mathcal{A}_{\mathcal{A}} = \{ (1,$	5	and the second
1,1,1-Trichloroethane	•	1	
Carbon Tetrachloride	•	ND	
1,2-Dichloroethane		ND	
Trichloroethene	·	13	
1,2-Dichloropropane		ND	
Bromodichloromethane	•	ND	
2-Chloroethylvinyl ether		ND	10
Cis-1,3-Dichloropropene		ND	
Trans-1,3-Dichloropropene		ND	
1,1,2-Trichloroethane		ND	
Tetrachloroethene	•	ND	
Dibromochloromethane		ND	
Chlorobenzene	.	ND	
Bromoform		ND	•
1,1,2,2-Tetrachloroethane		ND	• •
1,3-Dichlorobenzene		ND '	
1,4-Dichlorobenzene		ND	
1,2-Dichlorobenzene		ND	

ND = Not Detected above Method Reporting Limit (MRL) Approved by:

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-5 Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-06 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

PH Surrogate Star	ndard ID	设施设		EPH Fractionation Surrogate ID				
HY122497B				WHY022798A				
	Target Analytes			Range Analytes		Linear		
Units:	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRL		
	Naphthalene	ND	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons ¹	ND	0.5		
Diesel PAH	2-Methylnaphthalene	0.27	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5		
Analytes	Phenanthrene	0.72	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 1,2	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics 1	ND	0.5		
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance I	Range: 40-14	0%		
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery	76	5		
	Benzo[a]anthracene	0.26	0.2	Aromatic Surrogate % Recovery	10	1		
	Benzo[a]pyrene	0.24	0.2	Fractionation Surrogate Acceptant	ce Range: 60	-140%		
Other PAH	Benzo[b]fluoranthene	0.28	0.2	#1 Fractionation Surrogate % Recovery	89)		
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery				
Analytes	Chyrsene	0.26	0.2					
	Dibenzo[a,h]anthracene	ND	0.2	Hydrocarbon Range data exclude cond				
and the E	Fluoranthene	0.66	0.2	surrogate(s) and/or internal standards el	uting in that it	inge.		
	Fluorene	ND	0.2	的快调到				
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the				
	Pyrene	0.58	0.2	concentrations of PAH Target Analyte	es.			
	Benzo[g,h,i]perylene	'ND	0.2					

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: 4/4/98

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-6 Date Sampled: 4/8/98 Date Analyzed: 4/10/1998

ESS Project ID: 980957 ESS Sample ID: 980957-07

Dilution Factor: 1 Units: µg/L Analyst: MB

Parameter	Result		MRL
Dichlorofluoromethane	ND		1
Chloromethane	ND		I
Vinyl Chloride	ND		1
Bromomethane	ND		1
Chloroethane	ND	•	ı i
Trichlorofluoromethane	ND	·	1
1,1-Dichloroethene	ND		1
Methylene Chloride	8 B		l 1
trans-1,2-Dichloroethene	ND		1
1,1-Dichloroethane	ND		1
cis-1,2-Dichloroethene	ND		I 1
Chloroform	8		1
1,1,1-Trichloroethane	ND	4.5 4.5 9.7	1
Carbon Tetrachloride	ND	102 103	1
1,2-Dichloroethane	ND		. 1
Trichloroethene	ND	a .	· i
1,2-Dichloropropane	ND		1
Bromodichloromethane	ND		10
2-Chloroethylvinyl ether	ND		10
Cis-1,3-Dichloropropene	ND	an in the same and a same and a same a	1
Trans-1,3-Dichloropropene	ND		1
1,1,2-Trichloroethane	ND		1
Tetrachloroethene	ND		1
Dibromochloromethane	ND		. 1
Chlorobenzene	ND		1
Bromoform	ND		1
1,1,2,2-Tetrachloroethane	ND		.1
1,3-Dichlorobenzene	ND		1
1,4-Dichlorobenzene	ND	•	. I
1,2-Dichlorobenzene	ND	in associated method blank	

B = Present in associated method blank.

ND = Not Detected above Method Reporting Limit (MRL) Approved by: Date:	
Approved by:	
Approved by.	

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS EPA METHOD 8010 BY EPA METHOD 8260 LOW LEVEL

Client: Resource Controls ESS Project ID: 980957

Client Project ID: Taunton / Woodbine ESS Sample ID: 980957-08
Client Sample ID: MW-7
Date Sampled: 4/8/98
Units: µg/L
Date Analyzed: 4/10/1998
Analyst: MB

Parameter	Result		MRL
Dichlorofluoromethane	ND		1
Chloromethane	ND		1.
Vinyl Chloride	ND		1
Bromomethane	ND	•	1
Chloroethane	ND		1
Trichlorofluoromethane	ND		1
1,1-Dichloroethene	ND		1
Methylene Chloride	ND		1
trans-1,2-Dichloroethene	ND		1
1,1-Dichloroethane	ND		1
cis-1,2-Dichloroethene	ND		1
Chloroform	ND		1
1,1,1-Trichloroethane	ND		1
Carbon Tetrachloride	ND	•	1
1,2-Dichloroethane	ND		1
Trichloroethene	ND		. 1
1,2-Dichloropropane	ND		1
Bromodichloromethane	ND		. 1
2-Chloroethylvinyl ether	ND .	•	10
Cis-1,3-Dichloropropene	ND	ā.	1
Trans-1,3-Dichloropropene	ND	•	1
1,1,2-Trichloroethane	ND		1
Tetrachloroethene	2		1
Dibromochloromethane	ND	•	1
Chlorobenzene	ND	•	1
Bromoform	ND		1
1,1,2,2-Tetrachloroethane	ND		1
1,3-Dichlorobenzene	ND		1
1,4-Dichlorobenzene	ND		1
1,2-Dichlorobenzene	ND		1

ND = Not Detected above Method Reporting Limit (MRL)

Approved by:

Date: $\frac{y/21/98}{}$

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine

Client Sample ID: MW-7 Date Sampled: 4/8/98 Date Received: 4/9/1998 Date Extracted: 4/13/1998 ESS Project ID: 980957 ESS Sample ID: 980957-08 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1 F2 Dilution Factor: 1

Analyst: JAR

SAMPLE INFORMATION

Matrix: Aqueous Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

PH Surrogate Star	ndard ID		EPH Fractionation Surrogate ID					
/HY122497B	Dispension to the property of the state of t			WHY022798A				
	Target Analytes		医 数别等	Range Analyte	es .			
Units:	ug/l	RESULT	MRL	Units: mg/l	RESULT	MRL		
	Naphthalene	ND	0.2	F1: C ₉ -C ₁₈ Aliphatic Hydrocarbons	ND	0.5		
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C ₁₉ -C ₃₆ Aliphatic Hydrocarbons	ND	0.5		
Analytes	Phenanthrene	ND	0.2	F2: C ₁₁ -C ₂₂ Aromatic Hydrocarbons 12	ND	0.5		
	Acenaphthylene	ND	0.2	F2: Unadjusted C ₁₁ -C ₂₂ Aromatics	ND	0.5		
	Acenaphthene	ND	0.2	Sample Surrogate Acceptance	Range: 40-14	0%		
	Anthracene	ND	0.2	Aliphatic Surrogate % Recovery 68				
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery	5			
	Benzo[a]pyrene	ND	0.2	Fractionation Surrogate Acceptan	nce Range: 60	-140%		
Other PAH	Benzo[b]fluoranthene	ND	0.2	#1 Fractionation Surrogate % Recovery	51	1		
Target	Benzo[k]fluoranthene	· ND	0.1	#2 Fractionation Surrogate % Recovery 78				
Analytes	Chyrsene Chyrsene	ND	0.2					
	Dibenzo[a,h]anthracen	e ND	0.2	Hydrocarbon Range data exclude concentrations of any				
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards eluting in that range.				
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the				
	Pyrene	ND	0.2	concentrations of PAH Target Analy	tes.			
	Benzo[g,h,i]perylene	ND	0.2	ALEXANDER THE ENGLASSION THE				

ND = Not detected above MRL

N/A = Not applicable

DL = Surrogate diluted out of calibration range

Approved by:

Date: 4/21/93

QUALITY CONTROL SECTION

485 a 7 1 1

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLATILE ORGANICS AQUEOUS SURROGATE RECOVERY

Client: Resource Controls

Client Project ID: Taunton/Woodbine

ESS Project ID: 980957

Sample ID	DCE#	TOL#	BFB#
	%	%	%
V2 (D041000D1			
VMB041098B1	95	95	92
980957-01	92	95	91
980957-01 (10x)	94	95	91
980957-02	93	96	95
980957-02 (25x)	95	94	91
980957-03	95	95	91
980957-04	95	95	91
980957-04 (25x)	97	94	91
980957-05	95	98	96
980957-05 (25x)	100	94	92
980957-06	96	95	93
980957-07	92	93	92
980957-08	96	93	93

Column to be used to flag recovery values with an asterisk when outside the quality control range.

DCE = 1.2 DICHLOROETHANE-D4 (76-112%)

TOL = TOLUENE-D8 (89-103%)

BFB = BROMOFLUOROBENZENE (88-104%)

Approved by:

Date:

Tel. (401) 461-7181 Fax (401) 461-4486

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

VOLA EPA METHOD 8010 BY	TILE ORGANICS 7 FPA METHOD 8260	LOWIEVEL
Client: Resource Controls	LEAR MESTROD 0200	ESS Project ID: 980957
Client Project ID: Taunton / Woodbine		ESS Sample ID: VMB041098B1
Client Sample ID: Method Blank		Dilution Factor: 1
Date Sampled: N/A		Units: µg/L
-		Analyst: MB
Date Analyzed: 4/10/1998		
Parameter	Result	MRL
Dichlorodifluoromethane	ND	1
Chloromethane	ND	. • 1
Vinyl Chloride	ND	<u> 1</u>
Bromomethane	ND	1
Chloroethane	ND	1
Trichlorofluoromethane	ND	1
1,1-Dichloroethene	ND	. 1
Methylene Chloride	2	
trans-1,2-Dichloroethene	ND	1
1,1-Dichloroethane	ND	1
trans-1,2-Dichloroethene	ND	1
Chloroform	ND	. 1
1,1,1-Trichloroethane	, ND	1
Carbon Tetrachloride	ND	_ 1
1,2-Dichloroethane	ND	1
Trichloroethene	ND	1
1,2-Dichloropropane	ND	1
Bromodichloromethane	ND	1
2-Chloroethylvinyl ether	ND	10
Cis-1,3-Dichloropropene	ND	1
Trans-1,3-Dichloropropene	ND	.1
1,1,2-Trichloroethane	ND	1
Tetrachloroethene	ND	1
Dibromochloromethane	ND	1
Chlorobenzene	ND	1
Bromoform	ND	1
1,1,2,2-Tetrachloroethane	ND	1
1,3-Dichlorobenzene	ND	1
1,4-Dichlorobenzene	ND	
1,2-Dichlorobenzene	ND	1
N/A = Not Applicable		
ND = Not Detected above Method Reporting Limit	(MRL)	
		11/1./
Approved by:	Date:	7/v/sY
	_	

Tel. (401) 461-7181 Fax (401) 461-4486 20

Division of Thielsch Engineering, Inc.

CERTIFICATE OF ANALYSIS

EXTRACTABLE PETROLEUM HYDROCARBON (EPH) ANALYSIS METHOD FOR RANGES: MADEP EPH 98-1 METHOD FOR TARGET ANALYTES: 8270 (SIM)

Client: Resource Controls

Client Project ID: Taunton / Woodbine Client Sample ID: Method Blank

Date Sampled: N/A
Date Received: N/A
Date Extracted: 4/13/1998

ESS Project ID: 980957 ESS Sample ID: 0413-B4 Date Analyzed: 4/16/1998 F1 Dilution Factor: 1

F2 Dilution Factor: 1 Analyst: JAR

SAMPLE INFORMATION

Matrix: Soil

Container: Satisfactory Aqueous Preservative: None Temperature: See Chain Extraction Method: 3510 % Moisture (Soil): 0

EPH ANALYTICAL RESULTS

EPH Surrogate Star	PH Surrogate Standard ID			EPH Fractionation Surrogate ID				
WHY122497B	HY122497B			WHY022798A				
	Target Analytes				Range Analyte	S		
Units:	ug/l	RESULT	MRL	Units:	mg/l	RESULT	MRL	
	Naphthalene	ND	0.2	F1: C ₉ -C ₁₈ Aliphatic	Hydrocarbons	ND	0.5	
Diesel PAH	2-Methylnaphthalene	ND	0.2	F1: C19-C36 Aliphatic	c Hydrocarbons 1	ND	0.5	
Analytes	Phenanthrene	ND	0.2	F2: C11-C22 Aromatic	c Hydrocarbons 12	ND	0.5	
	Acenaphthylene	ND	0.2	F2: Unadjusted C11-0	C ₂₂ Aromatics	ND	0.5	
The second second	Acenaphthene	ND	0.2	Sample Surr	rogate Acceptance	Range: 40-14	0%	
	Anthracene	ND	0.2	Aliphatic Surrogate	% Recovery	77		
	Benzo[a]anthracene	ND	0.2	Aromatic Surrogate % Recovery		93		
	Benzo[a]pyrene	ND	0.2	Fractionation S	urrogate Acceptai	nce Range: 60	-140%	
Other PAH	Benzo[b]fluoranthene	· ND	0.2	#1 Fractionation Sur	rogate % Recovery	77	1	
Target	Benzo[k]fluoranthene	ND	0.1	#2 Fractionation Sur	rrogate % Recovery	94		
Analytes	Chyrsene	ND	0.2					
	Dibenzo[a,h]anthracene	ND	0.2	¹ Hydrocarbon Range data exclude concentrations of any				
	Fluoranthene	ND	0.2	surrogate(s) and/or internal standards eluting in that range.				
	Fluorene	ND	0.2					
	Indeno(1,2,3-cd)pyrene	ND	0.2	² C ₁₁ -C ₂₂ Aromatic Hydrocarbons exclude the				
	Pyrene	ND	0.2	concentrations of	FPAH Target Analy	rtes.		
	Benzo[g,h,i]perylene	ND	0.2					

ND = Not detected above Method Reporting Limit (MRL)

N/A = Not applicable

DL = Sample diluted out of calibration range

Approved by:	

Date: 4/2/98

ESS LABORATORY CERTIFICATIONS

Rhode Island: 179

Connecticut: PH-0750

Maine: RI002

Massachusetts: M-RI002

New Hampshire:

Drinking Water: 242498-A

Wastewater: 242498-B

New Jersey: 78002

New York: 11313

Environmental Analysis/Water:101770

Solid and Hazardous Waste: 101770

CHAIN OF CUSTODY

Page / of /

Division of Thielsch Engineering, Inc. 185 Frances Avenue, Cranston, RI 02910-2211 Tel. (401) 461-7181 Fax (401) 461-4486

Tel. (401) 461-7181 Fax (401) 461-4486					Turn Time Standard (2 Wee	ks)	Oth	cr	5	- D	44		ESS-I	AB PI	ROJE)	517	7					
Co. Name RESOURCE	000	VIIV O	u	Pro	ect #	A	4640 Project Name 006 TAUNTON/WOOD	BINE							Anal	ysis R	equir	ed		7		
Contact Person PAT CORCORAN				Address 474 BROADWAY				erš		1		\int	1			\int	\int	\int	T	\mathcal{T}	T I	
City PAWINCK	=		State R1		(N.	Zip Tel. 401 72	8-6360	ontain	ainer		63.00		1								/ //
Purchase Order # 5097						F	401 727-[849		Number of Containers	Type of Container				1-1						/		
ESS LAB Sample #	Da	ate	Collection Time	COMP	GRAB	MATRIX	Sample Identification	on	Num	Type	1000	PAH	HA.			L					1	\perp
01	48	398	3:45				MW-21		4	G	V	\										
02	i	\	2:20				MW-43		4	G	V	V	1		_	_			\perp	_	_	
03			4:00				MW-D		4	G	V	✓				_				_	\dashv	
04			2:40				MW-2D	,	4	G	V	/	V			<u> </u>			_	\dashv	\dashv	$\perp \downarrow \downarrow$
05			2:00				MW-4D		4	G		1	4		\perp	<u> </u>			_	\dashv	\dashv	
DU			4:15				Mw-5		4	G	V	V				ļ				\perp	_	_
72			5:00				MW-b		4	G	1	1	<u> </u>					_			_	
08		Y	3:20				MW-7		4	G	V	\checkmark									\perp	
	¥	-		-			MW-8P														\perp	
	_	1					MW-9P-]									
													:		ŀ							
													,									
Container Type:	P-P	oly	G-Glass	1	S-S	terile	V-VOA Matrix:	DW-Drinking	Water		S-So	lid		GW-C	Ground	Wat	er	,	ww-v	Waste	water	
Code Intent		s	No Com	ment																		
Seals Intact:		•																				;
Relinquished by: (Si			4/8 15:0	ر کاه	K	1	Twin 19/6/50		uar	the	4	1/28	75		LU	M	al	W	la	vei	192	tg/Time
Relinquished by: (6)	gnature)		Date/Time	Rec	cived	by:	Signature) Dise/Time	Relinquished by: (Signatu	re)		Dat	e/Tir	ne Rec	eived l	oy: (Si	gnatur	·c)			Da	te/Time

APPENDIX E

Water Well Survey

May 5, 1998

On May 1, 1998 a survey was made of the following addresses to determine if any well water was being used.

17 Oak Ave.

Amaro Murteira

18 Oak Ave.

Allen F. Macedo

30 Oak Ave.

Brenda J. Costa

20 Belvoir Ave.

Michael MacMillan

22 Oak Ave.

Sebastiane Ferris

A site visit was made at each address and a physical inspection determined that all properties used the Municipal Water Supply.

Sincerely,

Paul K. Donnelly

Inspector of Plumbing

FirstName	LastName	Address1	Address2		City	State MA	PostalCode 02780
Roland H	Goff	2 Oak Ave	2 Oak Ave		Taunton Assonet	MA	02702
Walter J & Sandra J	Gajdascz	1 1/2 Cliff Dr	8 Oak Ave		Taunton	MA	02780
Donald M & Donna	Lewis	10 Oak Ave	10 Oak Ave				02780
John T & Susan E	Vachon	14 Oak Ave	14 Oak Ave	. :	Taunton	MA	02780
Amaro & Lina	Murteira	12 Wilson St	17 Oak Ave		Taunton	MA	
Allan F	Macedo	18 Oak Ave	18 Oak Ave	7	Taunton	MA	02780
Lawrence H	Caverio	19 Bayview Ave	23 Oak Ave	75	Berkley	MA	02779
Richard J & Corinne F	Lima	25 Oak Ave	25 Oak Ave	:	Taunton	MA	02780
Scot & Jean	Anderson	27 Oak Ave	27 Oak Ave		Taunton	MA	02780
Sandra LB	Alves	29 Oak Ave	29 Oak Ave	:	Taunton	MA	02780
Brenda J	Costa	30 Oak Ave	30 Oak Ave	- 1 - 1	Taunton	MA	02780
SE & AM	Gotham	6 Belvoir Ave	6 Belvoir Ave		Taunton	MA	02780
Antonio & Maria	Vieira	13 Belvoir Ave	13 Belvoir Ave		Taunton	MA	02780
Barbara	Hultman	14 Belvoir Ave	14 Belvoir Ave		Taunton	MA	02780
ED & M & G & T	Hebert	27 Crane Ave S	16 Belvoir Ave		Taunton	MA	02780
ML & JV	Pratt	16 R Belvoir Ave	16 R Belvoir Ave		Taunton	MA	02780
RJ Jr & PL	McClellan	18 Belvoir Ave	18 Belvoir Ave		Taunton	MA	02780
Michael & Theresa	MacMillan	20 Belvoir Ave	20 Belvoir Ave		Taunton	MA	02780
	Rose	4 Woodbine St	Woodbine St		Taunton	MA	02780
Leonel Taunton Housing Authority	10,50	30 Olney St	Oak Court		Taunton	MA	02780
	Simmons	913 Courier St	15 Oak Ave	-	Vero Beach	FL	32966-8761
Gilbert F Sebastiane	Ferris Ferris	22 Oak Ave	22 Oak Ave	(† ()	Taunton	MA	02780
Senasiiane	, 51113			195			

WATER DIVISION

CITY HALL

TAUNTON, MA 02780-3430

Dear Customer: The City of Taunton Water Department is conducting a survey of well water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire. 1. Is a water well located on your property? If the answer to Question 1 is YES, please answer the following question: 2. Is the water well currently in use? 3. Is the water well used for agricultural purposes? 4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) 7 YES No. 10 YES No. 11 YES No. 12 YES No. 12 YES No. 12 YES No. 13 YES No. 14 YES No. 15 YES No. 15 YES No. 16 YES No. 17 YES No. 17 YES No. 18 YES No. 18 YES No. 19	14 Be	ara Hultman elvoir Ave ton MA 02780	TEL. (508) 821-1045	FAX (508) 821-1059	Marc	h 23, 1	998	
The City of Taunton Water Department is conducting a survey of well water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire. 1. Is a water well located on your property? If the answer to Question 1 is YES, please answer the following question: 2. Is the water well currently in use? 3. Is the water well used for agricultural purposes? 4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) 1. YES No. 1.	RE:	14 Belvoir Ave						
City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire. 1. Is a water well located on your property? If the answer to Question 1 is YES, please answer the following question: 2. Is the water well currently in use? 3. Is the water well used for agricultural purposes? 4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) 1. YES No.	Dear	Customer:						
If the answer to Question 1 is YES, please answer the following question: 2. Is the water well currently in use? 3. Is the water well used for agricultural purposes? 4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) 1 YES No.	City	of Taunton. As part (of our survey, we re	quest your assistance	well wo by sper	ater use nding e	age in a mon	the nen
3. Is the water well used for agricultural purposes? 4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) YES N				•		YES		NC
4. Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns) YES N	2.	Is the water well co	urrently in us e ?			YES	Ye	NC
(for example, swimming pool, washing cars, watering lawns) YES N	3.	Is the water well us	ed for agricult ura l p	ourposes?		YES	X	_NC
5. Is the water well used for drinking water purposes?	4.	is the water well us (for example, swim	ed for oth er non-di ming pool, washing	inking water purposes: g cars, watering lawns)		YES	K	NC
	5.	Is the water well us	sed for drinking wat	er purposes?	Q	YES	户	NO

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

Roger Roache, Superintendent

WATER DIVISION

TAUNTON, MA 02780-3430

Scot & Jean Anderson TEL. (508) 821-1045

FAX (508) 821-1059

March 23, 1998

Scot & Jean Andersor 27 Oak Ave Taunton MA 02780

RE:

27 Oak Ave

Dear Customer:

1.	Is a water well located on your property?		YES	E NO
If the	e answer to Question 1 is YES, please answer the following questi	on:		
2.	Is the water well currently in use?		YES	□ NO
3.	Is the water well used for agricultural purposes?		YES	□ NO
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES	□ NC
5.	Is the water well used for drinking water purposes?		YES	□ NC

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

WATER DIVISION

TAUNTON, MA 02780-3430

RJ Jr & PL McClellan 18 Belvoir Ave TEL. (508) 821-1045 • FAX (508) 821-1059

March 23, 1998

Tau	nton MA 02780			
RE:	18 Belvoir Ave			
Dec	r Customer:			
City	City of Taunton Water Department is conducting a survey of we of Taunton. As part of our survey, we request your assistance by our time completing the following brief questionnaire.			
1.	is a water well located on your property?		YES	□ NC
If th	e answer to Question 1 is YES, please answer the following questi	ion:	· · · · · · · · · · · · · · · · · · ·	
2.	Is the water well currently in use?		YES	□ NC
3.	Is the water well used for agricultural purposes?		YE\$	NC NC
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES	D NC
5.	Is the water well used for drinking water purposes?		YES	₽ NC

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

... WATER DIVISION

TAUNTON, MA 02780-3430

TEL. (508) 821-1045 FAX (508) 821-1059

March 23, 1998

Roland H Goff 2 Oak Ave Taunton MA 02780

RE: 2 Oak Ave

Dear Customer:

The City of Taunton Water Department is conducting a survey of well water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire.								
1.	Is a water well located on your property?	. 🗖	YES	D NO				
If the	e answer to Question 1 is YES, please answer the following quest	ion:						
2.	Is the water well currently in use?		YES	# NO				
3. ,	is the water well used for agricultural purposes?		YES	# NO				
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES	₫ NO				
5.	Is the water well used for drinking water purposes?		YES	E NO				

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

TAUNTON, MA 02780-3430

4 W	nel Rose oodbine St nton MA 02780	Mare	ch 23,	, 1998	
RË:	Woodbine St				
Dea	r Customer:	٠			
City	City of Taunton Water Department is conducting a survey of of Taunton. As part of our survey, we request your assistance our time completing the following brief questionnaire.	well w	ater u nding	usage g a mo	in the oment
1.	Is a water well located on your property?		YES	* [1 NX
If the	e answer to Question 1 is YES, please answer the following que	estion:	•	en en en en en en en en en en en en en e	•
2.	Is the water well currently in use?		YES		1 NO
3.	Is the water well used for agricultural purposes?	🙃	YES		0N [
4.	Is the water well used for other non-drinking water purposes (for example, swimming pool, washing cars, watering lawns		YES) NO
5.	Is the water well used for drinking water purposes?	0	YES		ON [
		·	<u> </u>		

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

Roger Roache, Superintendent CC:

WATER DIVISION TAUNTON, MA 02780-3430

Lawrence H Caverio 19 Bayview Ave

TEL. (508) 821-1045 FAX (508) 821-1059

March 23, 1998

Berkley MA 02779

RE: 23 Oak Ave

Dear Customer:

The City of Taunton Water Department is conducting a survey of well water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire.

1. <i>If th</i>	Is a water well located on your property? The answer to Question 1 is YES, please answer the following question 1.	☐ YES	NC
2.	Is the water well currently in use?	El VEC	
3.	Is the water well used for agricultural purposes?	☐ YES	
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	□ YES	□ NO
5.	Is the water well used for drinking water purposes?	□ YES	NO

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

WATER DIVISION

TAUNTON, MA 02780-3430

TEL. (508) 821-1045 • FAX (508) 821-1059 ED & M & G & T Hebert

27 Crane Ave S

March 23, 1998

□ NO

☐ YES

Taun	ton MA 02780		•		
RE:	16 Belvoir Ave				
Dea	r Customer:				
City	City of Taunton Water Department is conducting a survey of we of Taunton. As part of our survey, we request your assistance by our time completing the following brief questionnaire.	ell wo	ater usaç nding a	ge in mon	the nent
1.	Is a water well located on your property?		YES	ÎΔ	NO
If the	e answer to Question 1 is YES, please answer the following questi	ion:	er Office	 	
2.	Is the water well currently in use?		YES		NO
3.	Is the water well used for agricultural purposes?		YES		NO
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES	Ò	NO

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Is the water well used for drinking water purposes?

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

... WATER DIVISION

TAUNTON, MA 02780-3430

The City of Taunton Water Department is conducting a survey of well water usage in the

TEL. (508) 821-1045

ML & JV Pratt

FAX (508) 821-1059

March 23, 1998

16 R Belvoir Ave Taunton MA 02780

RE:

16 R Belvoir Ave

Dear Customer:

•	City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire.					
1.	is a water well located on your property?	□ Y	ES	E NO	0	
If the	e answer to Question 1 is YES, please answer the following questi	on:				
2.	Is the water well currently in use?	□ Y	ES		0	
3.	is the water well used for agricultural purposes?	□ Y	ES		0	
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	□ Y	ES	□ N	0	
5.	Is the water well used for drinking water purposes?	□ Y	ES	O N	O	

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

Department of Public Works WATER DIVISION CITY HALL

	TAUNTON, MA 02780-3430				
25 O	ard J & Corinne F Lima ^{TEL. (508)} 821-1045 FAX (508) 821-1059 ak Ave fon MA 02780		March	23, 19	98
RE:	25 Oak Ave				
Dear	Customer:		·		
City	City of Taunton Water Department is conducting a survey of well of Taunton. As part of our survey, we request your assistance by sur time completing the following brief questionnaire.	1 14//	ater uca	ao in t	he eni
1.	Is a water well located on your property?		YES	Ø∕ N	_ O
If the	answer to Question 1 is YES, please answer the following question	7:	- 1 (48)		
2. /	is the water well currently in use?		YES	ΠИ	0
3.	is the water well used for agricultural purposes?		YES	ПΝ	0
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES	ПΝ	0
5.	Is the water well used for drinking water purposes?		YES	□ N	0
Taunt	you for your assistance. Please place the completed surve ope and send to Mr. Paul Donnelly, City of Taunton, City Hall, on, MA 02780, (508) 821-1015. Again, thank you. ruly Yours,	y i 15	n the c	ittache er Stree	− ed et,

Roger Roache, Superintendent

CITY OF TAUNTON

Paul Donnelly

TAUNTON, MA 02780-3430

Antonio & Maria Vieira

Paul Donnelly

CG:

Roger Roache, Superintendent

TEL. (508) 821-1045 • FAX (508) 821-1059

March 23, 1998

13 B	elvoir Ave				•
Taur	iton MA 02780				
RE:	13 Belvoir Ave	•			
Dea	r Customer:				
	to the company of the control of the				en en en en en en en en en en en en en e
City	City of Taunton Water Department is conducting a survey of w of Taunton. As part of our survey, we request your assistance b			-	
of yo	our time completing the following brief questionnaire.			•	
1.	Is a water well located on your property?		YES	囡	NO
If the	e answer to Question 1 is YES, please answer the following quest	ion:			
2.	Is the water well currently in use?		YES		NO
3.	is the water well used for agricultural purposes?		YES		NO
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	Ò	YES		NO
5.	Is the water well used for drinking water purposes?		YES		NO
env	nk you for your assistance. Please place the completed su elope and send to Mr. Paul Donnelly, City of Taunton, City H nton, MA 02780, (508) 821-1015. Again, thank you.	rvey all, 1:	in the 5 Sumn	attad ner St	ched reet,
Ven	/ Truly Yours,			•	٠
ĊIT	OF TAUNTON				

Department of Public Works WATER DIVISION CITY HALL

TAUNTON, MA 02780-3430

Taunton Housing Authority

March 23, 1998

30 Olney St Taunton MA C	2780						
RE: Oak Cou	uri .				÷		
Dear Custome							
City of Tauntor	unton Water Department. As part of our survey ompleting the following	ent is conducting a y, we request your c	assistance by sp		_	-	
1. Is a wate	er well located on you	r property?		⊐ Y	ES 🚾	Ø	NO
If the answer to	o Question 1 is YES, ple	ease answer the follo	owing question	•	ilgha dise		
2. Is the wo	ater well currently in us	e?		□ ·Y	ŒS		NO
3. Is the wo	ater well used for agric	ultural purposes?		– 1	ES		NO
	ater well used for other mple, swimming pool,			_ \ _ \	(ES	□	NO
5. Is the wo	ater well used for drink	ing water purposes?	!	- 1	res .		NO
						· · · · · · · · · · · · · · · · · · ·	
envelope and	r your assistance. Plant of the send to Mr. Paul Do. (2780, (508) 821-1015.	nnelly, City of Taur					

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

WATER DIVISION

TAUNTON, MA 02780-3430

Walter J & Sandra J Gajdascz (508) 821-1045 FAX (508) 821-1058 1 1/2 Cliff Dr Assonet MA 02702

March 23, 1998

RE: 8 Oak Ave

Dear Customer:

1.	is a water well located on your property?		YES		40
If th	e answer to Question 1 is YES, please answer the following questi	ion:			
2.	Is the water well currently in use?		YES		۸Ò
3.	Is the water well used for agricultural purposes?		YES	ΔN	40
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)		YES		VO
5.	Is the water well used for drinking water purposes?		YES		10

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

WATER DIVISION

TAUNTON, MA 02780-3430

CITY OF TAUNTON

Roger Roache, Superintendent

Paul Donnelly

CC:

TEL. (508) 821-1045 • FAX (508) 821-1059

6 Belvoir Ave Taunton MA 02780		Marc	JII 23,	1770	
RE: 6 Belvoir Ave					
Dear Customer:					
The City of Taunton Water Dep City of Taunton. As part of our of your time completing the fol	partment is conducting a survey of survey, we request your assistance llowing brief questionnaire.	well wo	ater u nding	sage i	n the ment
Is a water well located or	n your property?		YES		NO
If the answer to Question 1 is YE	ES, please answer the following que	estion:	4	igi Ri	
Is the water well currently	y in use?	□	YES		NO
3. Is the water well used for	r agricultural purposes?		YES		NO
	r other non-drinking water purposes pool, washing cars, watering lawns		YES		NO
5. Is the water well used for	r drinking water purposes?		YES		NO
•	e. Please place the completed aul Donnelly, City of Taunton, City 015. Again, thank you.	•			

WATER DIVISION

CITY HALL

TAUNTON, MA 02780-3430

Gilbert F Simmons
913 Courier St

TEL. (508) 821-1045 • FAX (508) 821-1059

March 23, 1998

Ver	o Beach FL 32966-8761		
RE:	15 Oak Ave		
Dec	ar Customer:		i.
City	City of Taunton Water Department is conducting a survey of words of Taunton. As part of our survey, we request your assistance by our time completing the following brief questionnaire.	ell water u	sage in the a momen
1.	Is a water well located on your property?	□ YES	□ NC
If th	e answer to Question 1 is YES, please answer the following questi	ion:	
2.	Is the water well currently in use?	□ YES	□ NC
3.	is the water well used for agricultural purposes?	□ YES	□ NC
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	□ YES	□ NC
5.	Is the water well used for drinking water purposes?	□ YES	□ NC
The	ok you for your gointman. Discuss also also also also also also also al		

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

WATER DIVISION

TAUNTON, MA 02780-3430

John T & Susan E Vachon

FAX (508) 821-1059

March 23, 1998

14 Oak Ave Taunton MA 02780

RE: 14 Oak Ave

Dear Customer:

The City of Taunton Water Department is conducting a survey of well water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire.

1. Is a water well located on your property?

☐ YES

図 NO

If the answer to Question 1 is YES, please answer the following question:

TEL. (508) 821-1045

2. Is the water well currently in use?

1 YES

□ NO

Is the water well used for agricultural purposes?

□ YES

□ NO

4. Is the water well used for other non-drinking water purposes:

(for example, swimming pool, washing cars, watering lawns)

☐ YES

□ NO

5. Is the water well used for drinking water purposes?

☐ YES

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

cc: Roger Roache, Superintendent

WATER DIVISION CITY HALL -

TAUNTON, MA 02780-3430

TEL. (508) 821-1045 FAX (508) 821-1059

☐ YES

□ NO

10 C	Dak Ave nton MA 02780		Marc	n 23, I	998
RE:	10 Oak Ave				
Dec	r Customer:		·		
City	City of Taunton Water Department is conducting a survey of we of Taunton. As part of our survey, we request your assistance by our time completing the following brief questionnaire.				
1.	Is a water well located on your property?		YES		NO
If th	e answer to Question 1 is YES, please answer the following question	on:			
2.	Is the water well currently in use?		YES		NO
3.	Is the water well used for agricultural purposes?		YES		NO
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	Ö	YES		NC

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Is the water well used for drinking water purposes?

Very Truly Yours,

5.

CITY OF TAUNTON

Paul Donnelly

WATER DIVISION

CITY HALL

TAUNTON, MA 02780-3430

TEL. (508) 821-1045 FAX (508) 821-1059

March 23, 1998

Sandra LB 29 Oak Ave Taunton M	9	139 <u>.</u>	,,,,
RÉ: 29 C	ak Ave	•	
Dear Cust	omer:	×	
The City o	f Taunton Water Departm	nent is conducting	g a survey of well

water usage in the City of Taunton. As part of our survey, we request your assistance by spending a moment of your time completing the following brief questionnaire.

1.	is a water well located on your property?	□, IĘS	B NO			
If the answer to Question 1 is YES, please answer the following question:						
2.	Is the water well currently in use?	□ YES	₽ NO			
3.	Is the water well used for agricultural purposes?	☐ YES	□ NO			
4.	Is the water well used for other non-drinking water purposes: (for example, swimming pool, washing cars, watering lawns)	□ YES	D NO			
5.	Is the water well used for drinking water purposes?	☐ YES	P NO			

Thank you for your assistance. Please place the completed survey in the attached envelope and send to Mr. Paul Donnelly, City of Taunton, City Hall, 15 Summer Street, Taunton, MA 02780, (508) 821-1015. Again, thank you.

Very Truly Yours,

CITY OF TAUNTON

Paul Donnelly

APPENDIX F

La Parter

Additional Limitations

ADDITIONAL LIMITATIONS

- 1. The observations described in this Report were made under the conditions stated herein. The conclusions presented in the Report are based solely upon the services described therein and not on scientific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by Client. The work described in the Report was carried out in accordance with our Proposal and Associated Statement of Additional Terms and Conditions.
- 2. In preparing the Report, Resource Controls has relied on certain information provided by state and local officials and other parties referenced therein and on information contained in the files of state and/or local agencies available to Resource Controls at the time of the site evaluation. Although there may have been some degree of overlap in the information provided by the various sources, Resource Controls did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment.
- 3. Observations and explorations were made of the site as indicated within the Report. Where access to portions of the site were unavailable or limited, Resource Controls renders no opinion as to the presence of hazardous materials or oil, or to the presence of indirect evidence relating to hazardous materials or oil, in that portion of the site or structure. In addition, Resource Controls renders no opinion as to the presence of hazardous materials, oil or asbestos or to the presence of indirect evidence relating to hazardous materials or oil, where direct observation of the interior walls, floor, or ceiling of a structure on a site was obstructed by objects or coverings on or over these structures.
- 4. The purpose of this Report was to assess the physical and chemical characteristics of the subject site with respect to the presence in the environment of hazardous materials or oil. No specific attempt was made to check the compliance of present or past owners or operators of the site with federal, state or local laws and regulations, environmental or otherwise.
- 5. Except as noted within the text of this Report, no quantitative laboratory testing was performed as part of this evaluation. Where such analyses have been conducted by an outside laboratory, Resource Controls has relied upon the data provided and has not conducted an independent third party evaluation of the reliability of this data.
- 6. Chemical analyses performed for specific parameters during the course of studies have been used, in part, as a basis for determining the areas of environmental concern. Additional chemical constituents not searched for may be present in soil and/or groundwater at the site. Defined areas of environmental concern do not cover the potential additional constituents.
 - 7. Governmental agencies' interpretations, requirements and enforcement policies may impact the type and scope of any site remediation beyond that provided in the estimate. In addition, statutes, rules and regulations may be legislatively changed and inter-agency and intra-agency policies may be changed from present practice. If such changes occur, it may be necessary to re-evaluate their impact on the scope for site remediation.
 - 8. Water level readings have been made in the test pits, boring and/or wells and under conditions stated on the logs. This data has been reviewed and interpretations have been made in the text of this Report. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, temperature and other factors different from those prevailing at the time measurements were made.